OV 29
Service Manual

94MS46 Rev. P1

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1 Safety

Declaration of Conformity

The OV29 Frame conforms with the Safety Requirements of UL. Relevant data is inscribed on the ID Plate near the power cable inlet.

Explanation

This manual uses the following terms and symbols to indicate important information regarding safety. Should you have difficulty understanding information preceded by these terms and symbols, please contact your OLEC representative before proceeding.

WARNING **Risk of injury and/or property damage**.

CAUTION **Risk of damage.**

Note: Special information regarding efficient use of the OV29 Frame.

General

This Operation Manual must be read and clearly understood by all operators, supervisors and maintenance personnel with special attention to safe operation. It must be located near the unit for ready reference. All new operators and personnel should be trained and be made familiar with its safe use. The manufacturer and supplier shall not be liable for any damage arising out of improper or unauthorized use.

WARNING **Report any malfunction or irregularity in operation to supervisor.**

Electrical

The OV29 Frame is connected to the electrical power line. It must be installed in accordance with local safety codes and kept dry and clean at all times. It is equipped with interlocks and protective devices to assure operator safety.

WARNING **Service must be performed by authorized personnel only.**

WARNING **Never disable or disconnect electrical interlock safety devices**.

UV

The OV29 Frame uses a most effective and energy saving light source that emits UV. Its enclosure is designed to protect the operator from direct exposure and is fitted with safety interlocks.

WARNING **Service must be performed by authorized personnel only.**

WARNING **Never disable safety interlocks.**

Maintenance and Service

It is safe to open the front door to clean the glass from underneath.

WARNING **When it becomes necessary to replace a lamp or to remove the transom the power line must be disconnected. Remove plug from the wall outlet or from the back of the unit!**

NOTE: To maintain the safe integrity of the OV29 Frame only genuine replacement parts approved by OLEC must be used.

WARNING **Repair service must only be performed by authorized personnel.**

WARNING **Never disable or disconnect electrical interlock safety devices**.

Environmental

The OV29 Frame is manufactured with great care to protect the environment. The lamps are specifically designed to eliminate emission of Ozone.

CAUTION **Only original OLEC replacement lamps must be used.**

2 Introduction

Purpose

The OV29 Frame is the perfect exposure unit for the OLEC Contact and Proofing Systems. This manual highlights specific functions and procedures to obtain repeatable, quality proofs, explains installation, steps of regular maintenance and trouble shooting.

Application

The OV29 Frame is suitable for exposure of proofing materials, films, and plates. Contact your OLEC representative for information on the extended use of your OV29 Frame.

Specifications

Mechanical

Overall glass area	580 x 780 mm	23 x 31 inch
Exposure area - critical evenness	500 x 700 mm	20 x 28 inch
Working height	940 mm	37 inch
H x W x D	1020 x 900 x 760 mm	40 x 35.5 x 30 inch
Crated H x W x D	1195 x 1020 x 1020 mm	47 x 40 x 40 inch
Weight	115 kg	251 lb
Crated Weight	139 kg	306 lb
Transport	4 unidirectional casters -	front to back
Door Clearance	800 mm - sideways.	

Electrical

Electrical supply line	120V 60 Hz ±10%	230 V 50 Hz ±10%
Power consumption	max 1.4 kW - 6.2 A	

Wiring

single phase - two conductor and Earth
DIN standard AC connector

Operation

Ambient temperatures	+ 50°F to + 90°F	+10°C to + 33°C
Humidity	20% - 90%	20% - 90%

Light

Lamp Type	L-902 metal halide, short arc, low pressur
Lamp Spectrum	Custom Lamp for OLEC products: 420-360 nm.
Power Selection	idle + low 300 - medium 600 - high 1,000 Watt.
Shutter	no-service, sinusoidal, sliding.

Description

Fully enclosed contact exposure system, glass up / light below, with fast draw vacuum blanket in the opening lid. Three level, varying intensity, UV light with great range of exposure intensity. Automatic, filter extends use from sensitive quartz light film to slow printing plates. Quick access controls, pre-programmed, uses latest microprocessor technology. Light integration assures most accurate repeatability.

Features

- Compact, fits between two work counters and against wall, no extra space required;
- Large glass exposure area from side to side, no space wasted;
- Balanced lid for easy operation, open as far as required;
- Easy access from three sides without obstruction by lifting devices;
- "Memo-pad" one key direct access to most useful programs;
- Closing the lid starts programmed exposure cycle, no keys to push;
- Easy cleaning of glass, top and bottom, easy maintenance.

3 Integrator/Controls Troubleshooting

Note: Use this section in conjunction with the OV29 Installation/ Operation Manual 94MU20.

Check the Fuse and Incoming Power

If the unit will not turn on check:

- The power cord connections on the left side outside of the rear panel.
- The fuse on the left side outside of the rear panel.

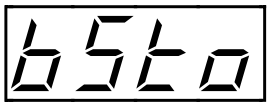
Check the Software

To do the software diagnostics test, turn power on and wait 2 minutes, then press [1],[2],[3] then [4]. this will put you into the SELECT mode.

Press the [8] key, the upper window will display Pn, the middle window will display the software number such as 1.25 and the lower window will display the software date 7.128. First digit is year (ie 1997), the next three digits are the day of that year (ie 128th day of 1997).

Press the [8] key again and the integrator LED segments will cycle through a test but not the quick access memory LED's.

Press the [8] key again, the upper window will display do, the middle window will display ProG (this is a ROM test) and the lower window will display tESt. After about 20 seconds the middle window will display ProG and the lower window will display Good. If Good is not displayed the unit has failed the ROM test and the integrator p.c.boards need to be replaced.



Press the [8] key again, the upper window will display do, the middle window will display bSto (this is a RAM test) and the lower window will display tESt. After about 20 seconds the middle window will display bSto and the lower window will display Good. If Good is not displayed the unit has failed the RAM test and the integrator p.c.boards need to be replaced.

If the unit fails this test replace the E-Prom on the Integrator P.C.board.

CAUTION Disconnect power.

- Remove the transom. See section Transom Removal and Reinstallation.
- Remove the two wing-nuts holding the P.C.board mounting plate to the left side of the unit.
- Locate and replace the E-Prom on the 64MI441E P.C.board.
- Reinstall in reverse order and reconnect power.

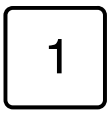
If the unit still fails the Diagnostics software test, replace the 64MI441E P.C.board.

CAUTION Disconnect power.

- Remove the two wing-nuts holding the P.C.board mounting plate to the left side of the unit. See Main Assembly diagram for location.
- Locate and replace the 64MI441E P.C. board. See Main Assembly diagram for location.
- Unplug all connectors, remove the mounting nuts and replace the board.
- Reinstall in reverse order and reconnect power.

Check the Keypads

To check the keypad press 1,2,3,4 to enter the SEL mode. Press the 8 key 5 times. This will put you in key test mode.



Press the 1 key. The bottom window will display 1.04. Press the 1 key 4 more times until the bottom window displays 1.00. This indicates that the key has been pressed 5 times total and the key function is good.

Press the 2 key. The bottom window will display 2.04. Press the 2 key 4 more times until the bottom window displays 2.00. This indicates that the key has been pressed 5 times total and the key function is good.

Press the 3 key. The bottom window will display 3.04. Press the 3 key 4 more times until the bottom window displays 3.00. This indicates that the key has been pressed 5 times total and the key function is good.

Press the 4 key. The bottom window will display 4.04. Press the 4 key 4 more times until the bottom window displays 4.00. This indicates that the key has been pressed 5 times total and the key function is good.

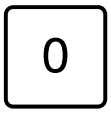
Press the 5 key. The bottom window will display 5.04. Press the 5 key 4 more times until the bottom window displays 5.00. This indicates that the key has been pressed 5 times total and the key function is good.

Press the 6 key. The bottom window will display 6.04. Press the 6 key 4 more times until the bottom window displays 6.00. This indicates that the key has been pressed 5 times total and the key function is good.

Press the 7 key. The bottom window will display 7.04. Press the 7 key 4 more times until the bottom window displays 7.00. This indicates that the key has been pressed 5 times total and the key function is good.

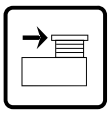
Press the 8 key. The bottom window will display 8.04. Press the 8 key 4 more times until the bottom window displays 8.00. This indicates that the key has been pressed 5 times total and the key function is good.

Press the 9 key. The bottom window will display 9.04. Press the 9 key 4 more times until the bottom window displays 9.00. This indicates that the key has been pressed 5 times total and the key function is good.



Press the 0 key. The bottom window will display 0.04. Press the 0 key 4 more times until the bottom window displays 0.00. This indicates that the key has been pressed 5 times total and the key function is good.

Press the key. The bottom window will display 10.04. Press the key 4 more times until the bottom window displays 10.00. This indicates that the key has been pressed 5 times total and the key function is good.



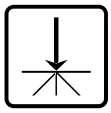
Press the key. The bottom window will display 18.04. Press the key 4 more times until the bottom window displays 18.00. This indicates that the key has been pressed 5 times total and the key function is good.

Press the key. The bottom window will display 17.04. Press the key 4 more times until the bottom window displays 17.00. This indicates that the key has been pressed 5 times total and the key function is good.

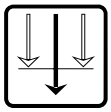
Press the +/- key. The bottom window will display 21.04. Press the +/- key 4 more times until the bottom window displays 21.00. This indicates that the key has been pressed 5 times total and the key function is good.

Press the % key. The bottom window will display 22.04. Press the % key 4 more times until the bottom window displays 22.00. This indicates that the key has been pressed 5 times total and the key function is good.

Press the key. The bottom window will display 13.04. Press the key 4 more times until the bottom window displays 13.00. This indicates that the key has been pressed 5 times total and the key function is good.



Press the key. The bottom window will display 20.04. Press the key 4 more times until the bottom window displays 20.00. This indicates that the key has been pressed 5 times total and the key function is good.



Press the key. The bottom window will display 11.04. Press the key 4 more times until the bottom window displays 11.00. This indicates that the key has been pressed 5 times total and the key function is good.

Press the key. The bottom window will display 16.04. Press the key 4 more times until the bottom window displays 16.00. This indicates that the key has been pressed 5 times total and the key function is good.

Press the [🔒] key. The bottom window will display [19.04]. Press the [🔒] key 4 more times until the bottom window displays [19.00]. This indicates that the key has been pressed 5 times total and the key function is good.

If the Display Board or Memory Board fails, replace it.

CAUTION Disconnect power.

- Remove the blanket. See section Blanket Removal and Reinstallation.
- Unplug all connectors, remove the mounting nuts and replace the board.
- Reinstall in reverse order and reconnect power.

Check the Inputs and Outputs of the 64CT484 Control Board

Hardware function test (64CT484 input/output).

CAUTION Make sure the lid is down but not closed completely The light is going to be opening the shutter in order to check light output.

- To access the hardware functions test press the [1],[2],[3] then [4] keys in sequence. The Middle Window will display [SEL].
- Press the [6] key so the top window displays [48] and the middle window will display [o001].This is the test mode for the 64CT484 I/O PC Board.
- Press the [9] key to reset the middle window to [o000].
- Press the [☼] key. One LED will light above the key and the light source should open the shutter at low intensity. Press the [☼] key again. Two LEDs will light above the key and the light source should open the shutter at medium intensity. Press the [☼] key again. Three LEDs will light above the key and the light source should open the shutter at high intensity. Press the [☼] key again. No LEDs will light above the key and the light source should close the shutter.

If the light does not operate properly:

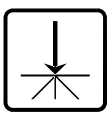
- Check the connection between J5 on the main board and J21 on the power supply. See Wiring Connections - 60Hz for 60Hz units, Wiring Connections - 50Hz for 50Hz units, in Chapter 5.
- Operate the light source from the Dip Switches on the AL 13/14.

a) If the light source does not work, go to the section AL 13/14 Light Source.

b) If the light source does work and the connection are good, replace the 64MI441E p.c.board. See Main Assembly diagrams in Chapter 5.

Motorized Diffuser

Note: This section applies only to units equipped with motorized diffuser.



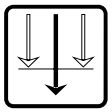
Press the [⏚] key, the LED above the key will light and the diffuser will move into place. Press the [⏚] key again, the LED above the key will go off and the diffuser will move back.

If the diffuser does not move:

- Check the diffuser motor for 12VDC. If motor is getting voltage check for a mechanical jam. If none, replace the motor.
- If the motor is not receiving 12VDC check the cabling to the diffuser p.c.board. If the cable is good replace the diffuser board 64DC447-34, see Wiring Diagram 60Hz or 50Hz in Chapter 5.
- If the diffuser is not moving or is moving erratically, check the jumper JP2, as shown in the diffuser wiring diagram.

Motorized Filter

Note: This section applies only to units equiped with a motorized filter. The OV29 may be equipped with either a Rotary Style filter or a Single Style filter.



If your OV29 is equipped with a Rotary Style filter:

Press the key. The first LED above the key will light and the clearing filter will move into place. Press the key again. The second LED above the key will light and the neutral density filter will move into place. Press the key again. The third LED above the key will light and the kokomo filter will move into place. Press the key again. None of the LED's above the key will light and the filter wheel will move into the empty space.

If the filter wheel does not move:

- Check the filter motor for 12VDC. If motor is getting voltage check for a mechanical jam. If there is no jam, replace the motor.
- If the motor is not receiving 12VDC, check the cabling to the filter p.c.board. If the cable is good replace the filter board 64MQ446, see Wiring Diagram 60Hz or 50Hz in Chapter 5.
- If filter does not stop moving check the photoelectric pickup on the 64MQ446 to make sure it is clean and the pickup tape on the bottom side of the filter wheel is clean. If everything is clean replace the filter board 64MQ446, see Wiring Diagram 60Hz or 50Hz in Chapter 5.

If your OV 29 is equipped with the Single Style filter:

- Press the key. All the LED's above the key will light and the Kokomo filter will move into place. Press the key again. The filter will move back out of the way.
- If the filter is not moving or is moving erratically, check the jumper JP2, as shown in the single style filter wiring diagram.

Vacuum Pump

1

Press the [1] key. The vacuum pump will turn on and LED 8 on the 64CT484 pc board will light. The middle window will read o001. Press the [1] key again and the vacuum pump will turn off.

If LED 8 is not lit, replace the 64CT484 pc board.

If LED 8 is lit and the pump does not come on, check the voltage output on P5-1 to P5-2 going to the pump.See Wiring Diagram 60Hz or 50Hz in Chapter 5.

- If no voltage, replace the 64CT484 pc board.
- If you have voltage, replace the vacuum pump.

Exhaust Blower

2

Press the [2] key. The frame exhaust blower will turn on and LED 7 on the 64CT484 pc board will light. The middle window will read o002. Press the [2] key again and the frame exhaust blower will turn off.

If LED 7 is not lit replace the 64CT484 pc board.

If LED 7 is lit and the exhaust blower does not come on, check the voltage output on P5-4 to P5-5 going to the exhaust blower, see Wiring Diagram 60Hz or 50Hz in Chapter 5.

- If no voltage replace the 64CT484 pc board.
- If you have voltage replace the exhaust blower.

Work Light

3

Press the [3] key, work light will turn on and LED 6 on the 64CT484 pc board will light and the middle window will read o004. Press the [3] key again and the work light will turn off.

If LED 6 is not lit replace the 64CT484 pc board.

If LED 6 is lit and the work light does not come on, check the voltage output on P5-7 to P5-8 going to the work light. See Wiring Connection diagrams.

- If there is no voltage replace the 64CT484 pc board.
- If there is voltage, replace the worklight.

Main Valve

4

Press the [4] key. The main valve will switch on and LED 5 on the 64CT484 pc board will light. The middle window will read o008. Press the [4] key again and the main valve will switch off and LED 5 on the 64CT484 pc board will turn off.

If LED 5 is not lit replace the 64CT484 pc board.

If LED 5 is lit and the main valve does not activate, check the voltage output on P5-10 to P5-11 going to the main valve, see Wiring Diagram 60Hz or 50Hz in Chapter 5.

- If there is no voltage replace the 64CT484 pc board.
- If there is voltage and the main valve is not activating replace the valve.

Accuvac Valve

Press the 5 key. The accuvac valve will switch on and LED 4 on the 64CT484 pc board will light. The middle window will read oU 15 Press the 5 key again and the accuvac valve will switch off and LED 4 on the 64CT484 pc board will turn off.

If LED 4 is not lit replace the 64CT484 pc board.

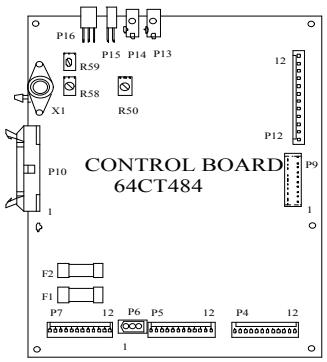
If LED 4 is lit and the accuvac valve does not activate, check the voltage output on P4-1 to P4-2 going to the accuvac valve, see Wiring Diagram 60Hz or 50Hz in Chapter 5.

- If there is no voltage replace the 64CT484 pc board.
- If there is voltage and the accuvac valve is not activating replace the valve.

Close the lid and the bottom window should read 1000.

Press the key twice to return to normal mode.

64CT484 PC Board Pin-Outs and LED's



LED's

LED 1	Not Used	LED 5	Main Vacuum Valve
LED 2	Not Used	LED 6	Yellow Work Light
LED 3	Not Used	LED 7	Cabinet Blower
LED 4	Accuvac Release Valve	LED 8	Vacuum Pump

P4 Connector

P4-1	Accuvac Release Valve	Red Wire
P4-2	Accuvac Release Valve	Black Wire

P5 Connector

P5-1	Vacuum Pump	Red Wire
P5-2	Vacuum Pump	Black Wire
P5-4	Cabinet Blower	Red Wire
P5-5	Cabinet Blower	Black Wir
P5-7	Yellow Light	Red Wire
P5-8	Yellow Light	Black Wir
P5-10	Main Vacuum Valve	Red Wire
P5-11	Main Vacuum Valve	Black Wir

P7 Connector - 220V

P7-4	Jumper	Yellow Wire
P7-5	Jumper	Yellow Wire
P7-7	Jumper	Yellow Wire
P7-8	Jumper	Yellow Wire
P7-6	V~ Hot	Brown Wire
P7-10	V~ Neutral	Blue Wire

continued on next page

P7 Connector - 110V

P7-3	V~ Hot	Brown Wire
P7-4	Jumper	Yellow Wire
P7-5	Jumper	Yellow Wire
P7-7	Jumper	Yellow Wire
P7-8	Jumper	Yellow Wire
P7-9	Jumper	Yellow Wire
P7-10	V~ Neutral	Blue Wire

P9 Connector

Communication cable to P1 on main processor board 64MI441E

P10 Connector

Communication cable to P1 on integrator display board 64MI488

P12 Connector

P12-1	Start Switch	Red Wire
P12-2	Start Switch	Black Wire

P13 Connector

Output 12VDC power supply not used (diffuser)

P14 Connector

Output 12VDC power supply to J1 on the motorized filter board 64MQ446

P15 Connector

Output Unregulated 12VDC power supply to P2 on main processor board 64MI441E

4 Frame Assembly

Transom Removal and Reinstallation

CAUTION Disconnect power to the frame before continuing.

- While facing the front of the frame place your finger tips on the left and right-hand sides of the front panel.
- Pull towards you to release panel from its catches.The panel will then pivot at the bottom.
- Pull the panel up and off of the top of the frame kick panel.
- Remove the transom within the cabinet by removing the two hold-down screws (one from the left front of the transom and on from the right rear of the transom.)

CAUTION When reinstalling the transom be sure to replace the two hold-down screws.

- Once the transom is free from its retaining screws within the cabinet walls, remove it from the cabinet.
- Install in reverse order.

Front Panel Safety Interlock

All frames are equipped with a normally closed switch located on the lower right side of the unit. When the front panel is removed, the switch opens and **WILL NOT ALLOW** the light source to do an exposure, even though the integrator appears to be giving it the command to do so. This interlock is plugged directly into the light source.

Glass Removal and Replacement

Note: Removal of the frame glass is easy.

- Remove the 4 (four) Phillips screws holding the front glass holder to the frame.
- Remove the front glass holder.
- Slide the glass $^{1}/_{2}$" toward the front of the frame.
- Lift the glass off of the frame and put it in a safe place so as not to get scratched or chipped.

Blanket Removal and Reinstallation

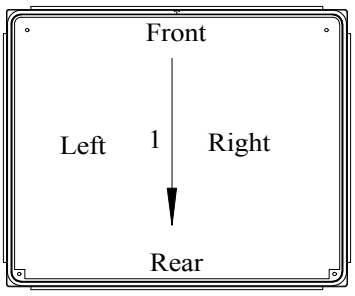
- While facing the front of the frame with the lid open, slide the blanket toward the rear of the lid. Remove the blanket from under the front lip.
- Slide the blanket toward the front of the lid. Remove the blanket from under the rear lip.
- Slide the blanket toward the right of the lid, remove the blanket from

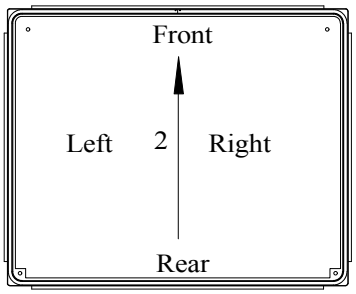
- under the left lip, then remove the blanket from under the right lip.
- Install in reverse order.

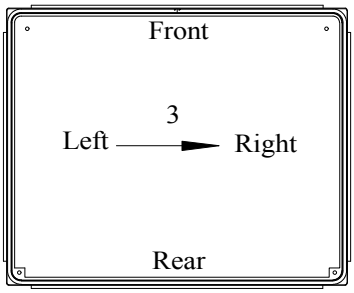
Note: The foam springs are straight and not bent over or caught on anything.

- All four edges or lips are located inside of the frame edges.
- The blanket is centered and freely compresses into the lid.

Note: Maximum registration pin height is .070" (1.75mm), suggested pin height is .060" (1.5mm).





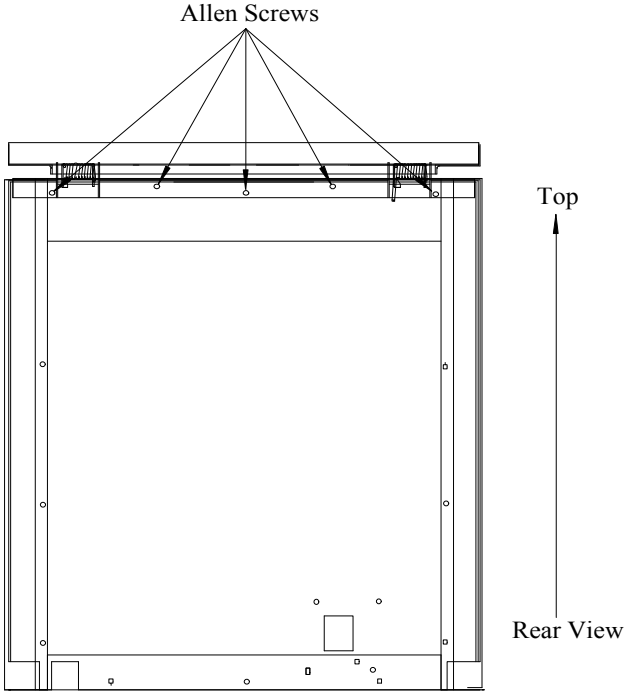


Lid Adjustment Procedure

- Loosen slightly the 5 Allen screws holding the hinge plate to permit adjustment of the lid/hinge assembly.
- Close the lid almost completely.
- Sighting from the side, move the hinge bracket/lid up or down so that the rear edge of the seal contacts the glass when the front edge of the seal is approximately .75” (19mm) above the glass. Opening the lid may help in making the adjustment. Insure that the seal makes square contact across the rear of the glass when the lid is closed.

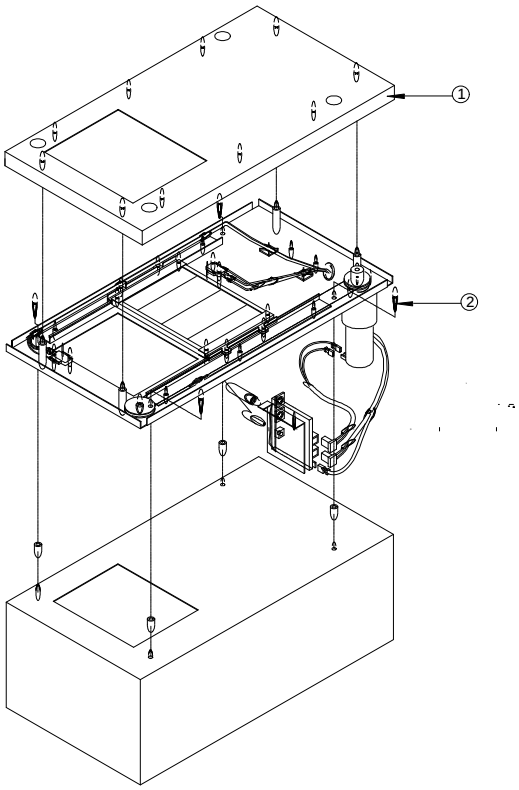
Note: The best registration results are achieved when the rear edge of the seal makes contact with the glass as late as possible while closing the lid. This means that the rear of the lid is adjusted as high as possible while still making a good vacuum seal when the lid is closed.

- Lightly tighten the 5 Allen head screws on the hinge bracket and verify the adjustment. Readjust as necessary as the tightening of the screws may have some effect on the adjustment.
- Turn the machine on and close the lid to verify vacuum. Proper vacuum should be attained within 1-2 seconds. If not, the lid adjustment may be too high and/or the seal is not square with the glass. Readjust as necessary.
- Fully tighten the 5 Allen screws and replace the rear panel. Use care to route cables and hose properly.



Sliding Motorized Filter (2 position)

Removal and Reinstallation



- Disconnect filter cable.
- Remove cover from filter assembly (1).
- Remove the 4 screws that attach the filter to the lamphead (2).
- Install in reverse order.

Filter not working.

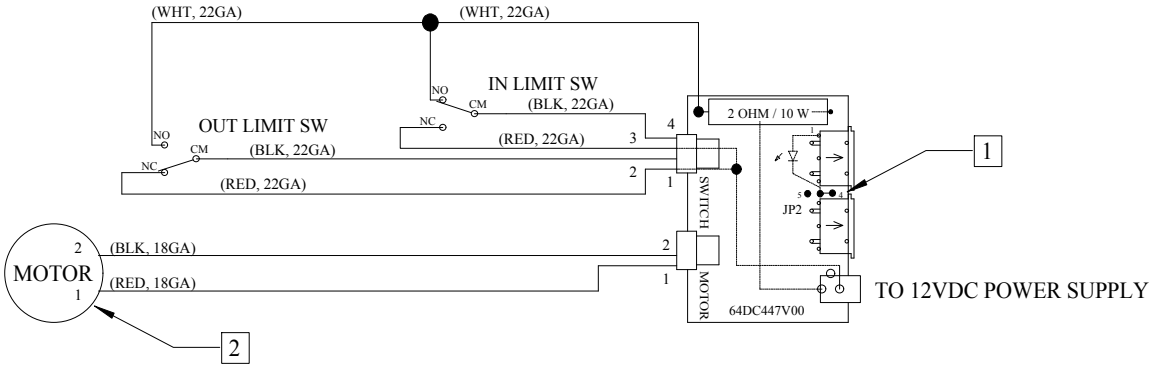
Note: Your OV 29 must have Software version 2.04 or higher for this filter to be recognized.

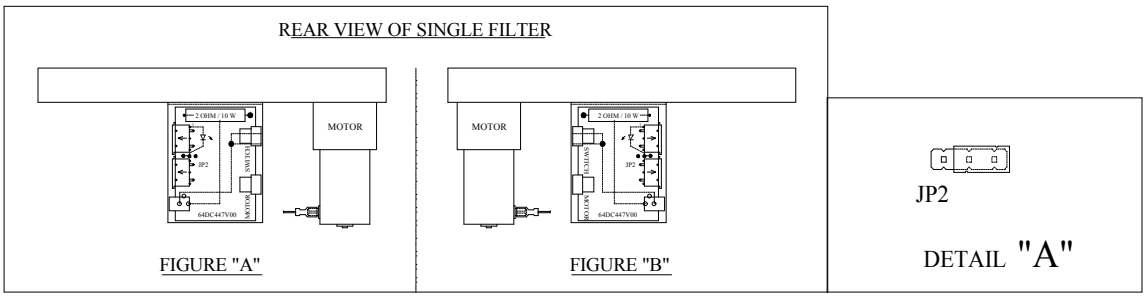
- Make sure integrator filter mode [FiLtr] is turned **ON**. Also, you **must** ensure [iFiLt] option is turned **ON**.
- Make sure the power is plugged into J3 on the 64DC447 filter board.
- Make sure the DIN cable is plugged into J2 socket on the 64DC447 filter board
- Make sure DIN cable is good.
- Check for voltage (12VDC) at the motor, if votage present replace motor.

Filter not stopping or stopping in the wrong position.

- Locate the motor and the filter position switch.

Wiring Diagram - Single Filter





2. THIS DIAGRAM SHOWS THE CONNECTIONS TO THE MOTOR IN THE FILTER ASSEMBLY AS IN FIGURE "B".

   FOR FILTER ASSEMBLY AS IN FIGURE "A", THE RED WIRE IS CONNECTED TO PIN 2 AND THE BLACK WIRE TO PIN 1.

1. PLACE JUMPER JP2 ON PCB AS SHOWN IN DETAIL "A".

NOTES: UNLESS OTHERWISE SPECIFIED

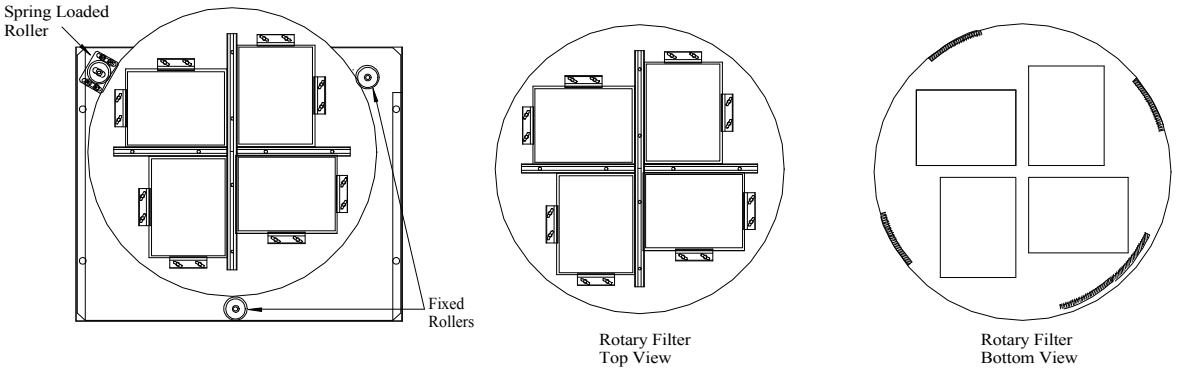
Rotary Motorized Filter (4 position)

Removal and Reinstallation

Remove the transom (see Transom Removal and Reinstallation).

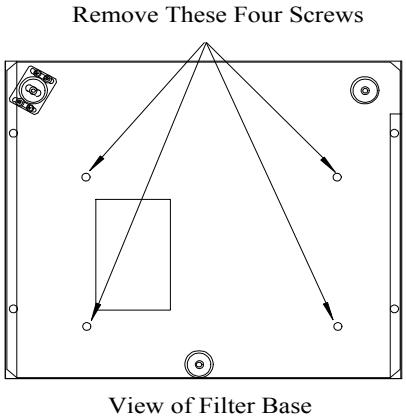
To install filter:

- Locate the motor and the photoelectric sensors (D1 & D2) on the back side of the base plate. Make sure the sensors are free of dust and dirt.
- Locate the three white nylon idler pulleys mounted horizontally on the base assembly.
- Slide the rotary disk, top up, onto the two rear pulleys.
- While supporting the disk from the front, push it back and notice how the left rear idler pulley slides.
- While pushing back on the disk, clear the edge of the front idler pulley and place the filter wheel into the front pulley.
- Remove in reverse order.



To remove holder:

- Remove the four screws holding the base onto the AL 13/14 Light.



View of Filter Base

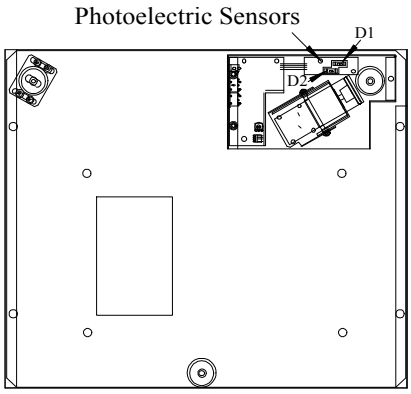
- Lift the base from the left side and unplug the QC 5 cable.
- Lift the entire base from the frame.
- Reinstall in reverse order.

Filter not working.

- Make sure integrator filter mode is turned ON.
- Make sure the power is plugged into P3 on the 64MQ446 filter board.
- Make sure the DIN cable is plugged into P2 socket on the 64MQ446 filter board
- Make sure DIN cable is good.
- Make sure the ribbon cable is good.

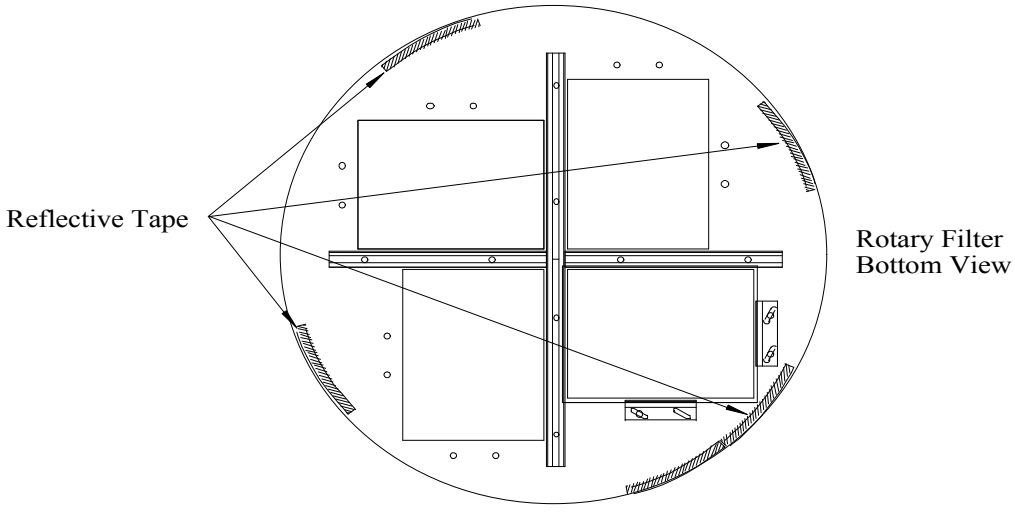
Filter not stopping or stopping in the wrong position.

- Locate the motor and the photoelectric sensors (D1 & D2) on the back side of the base plate. Make sure the sensors are free of dust and dirt.



View of Filter Base

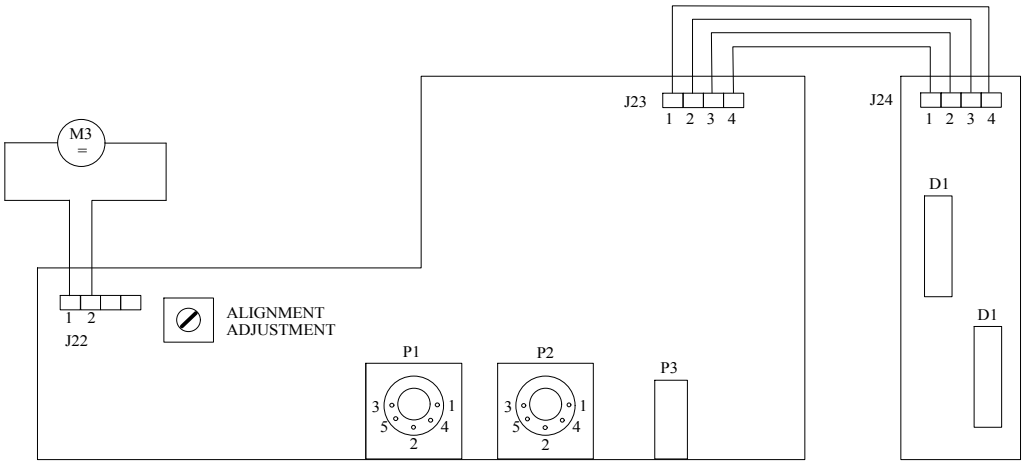
- Make sure the reflective tape on the bottom side of the filter wheel is intact and free of dust and dirt (see Filter Wheel Installation and Removal).



Rotary Motorized Filter Board

Alignment Adjustment:

There is an alignment adjustment trimpot on the motorized filter board. This adjustment allows you to adjust the filter to stop square over the light opening in the filter base.



P1 Connector	P2 Connector	P3 Connector	J22	J23
1. +5VDC	1. +5VDC	12 VDC	1. Count	1. Count
2. Ground	2. Ground		2. Reset	2. Reset
3. +12VDC	3. +12VDC		3. +5VDC	+5VDC
4. Select- Data In	4. Select- Data In		4. Ground	4. Ground

Lid Section

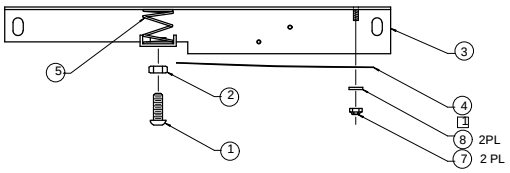
CAUTION Do not insert pointed objects, such as pencils or pens, into the hole which the lid latch fits into.

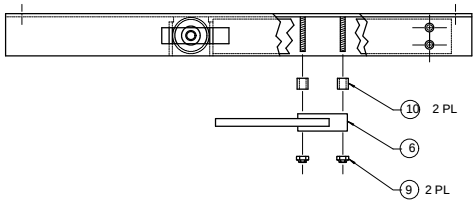
When the lid is closed on the frame, the plunger depresses a lever which activates a switch that starts the exposure sequence. When this switch is activated, the vacuum starts. This latch is mounted under the sheet metal cover at the front of the glass exposure area, which is held on by four (4) Phillips screws.

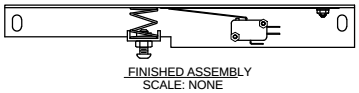
Latch Start Switch

To access and test the switch remove the four (4) Phillips screws holding the latch cover.

CAUTION **ONCE THIS LATCH COVER HAS BEEN REMOVED, THE FRAME GLASS IS FREE TO COME OUT. IF THE BLANKET SEALS WITH THE GLASS AND THE LID IS LIFTED, THE GLASS WILL ALSO BE LIFTED, UNTIL THE SEAL BREAKS AND THE GLASS WILL DROP AND MOST LIKELY BREAK.**







ITEM NO.	DESCRIPTION	OLEC P/N	QTY.
10	SPACER, #6 THRU X .25	42HHS8501	2
9	LOCKNUT, 4-40	41 04NLM	2
8	WASHER, #6	41 06WFR	2
7	LOCKNUT, 6-32	41 06NLM	2
6	SWITCH, LONG ACTUATOR	55SW17	1
5	SPRING, COMPRESSION 10LB	43SPR20	1
4	SPRING PLATE, SWITCH	11D2011A99	1
3	BRACKET, SWITCH/SPRING	11D1937A02	1
2	1/4-20 NUT BLACK	41B40NHX	1
1	1/4-20 X .63 SHBS BLACK	41BF0SHC.62	1

PARTS LIST

- Locate the switch.
- When the micro switch is activated by closing the lid, a vacuum cycle countdown and exposure sequence starts. It is normal for the switch to engage when the lid is closed, then disengage as the lid lifts when hand pressure is removed, then reengage as vacuum pulls the lid down.
- The micro switch is 5 VDC when normally open and goes low when closed. This voltage can be measured from com. (common) to n.o. (normally open).
- The micro switch can be adjusted slightly by moving the mounting bracket if necessary.

Lid Release

Note: In order for the lid to release the PUMP SOLENOID VALVE will release and bleed air to the blanket.

The lid is spring loaded and at the end of an exposure cycle will raise.

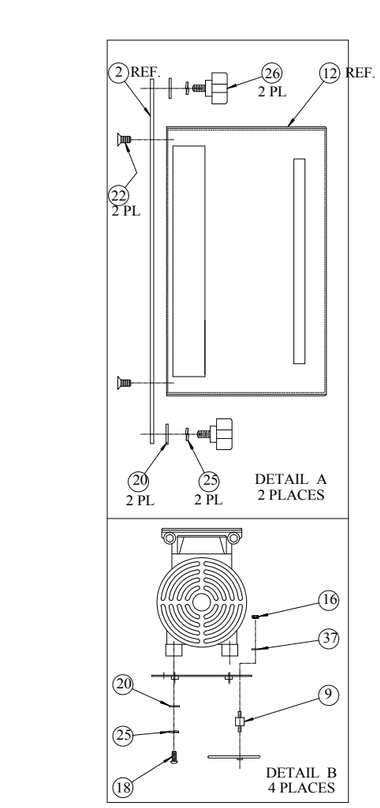
If the lid does not release check the PUMP SOLENOID VALVE to make sure it opens and bleeds air to the blanket.

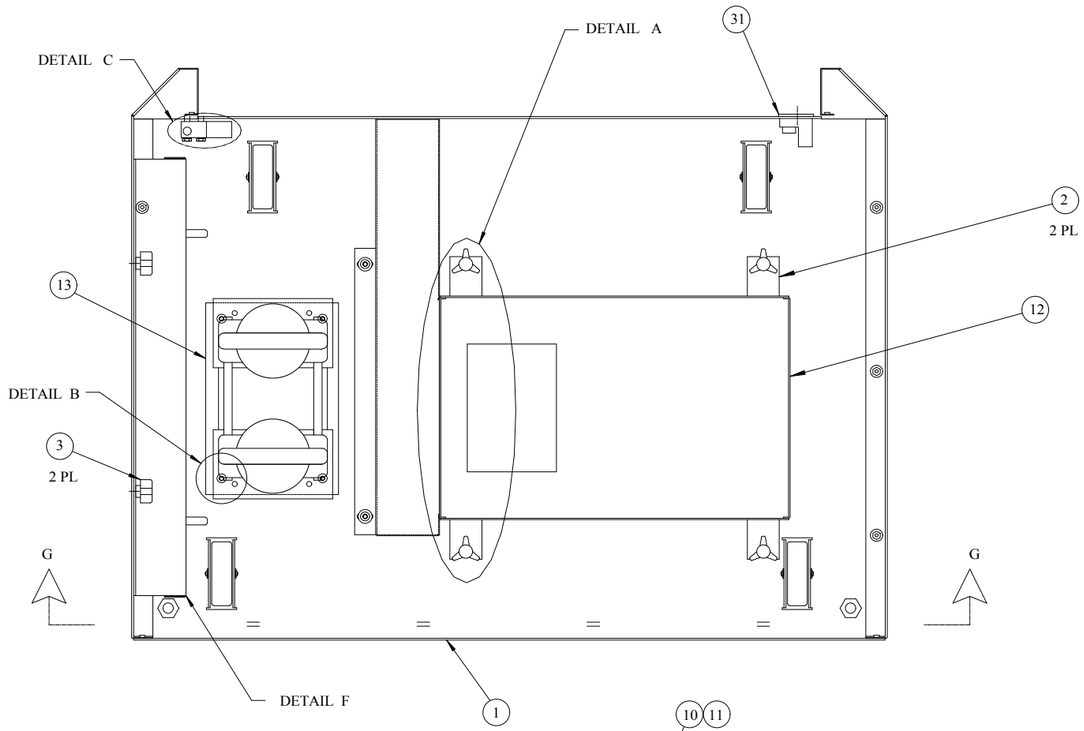
Removal and Reinstallation of Hoses

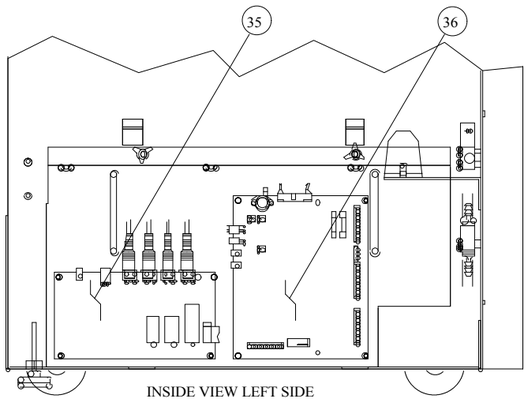
- Remove the transom (see Transom Removal and Reinstallation).
- Remove the blanket (see Blanket Removal and Reinstallation).
- Remove the defective hose and replace it.
- Install in reverse order.

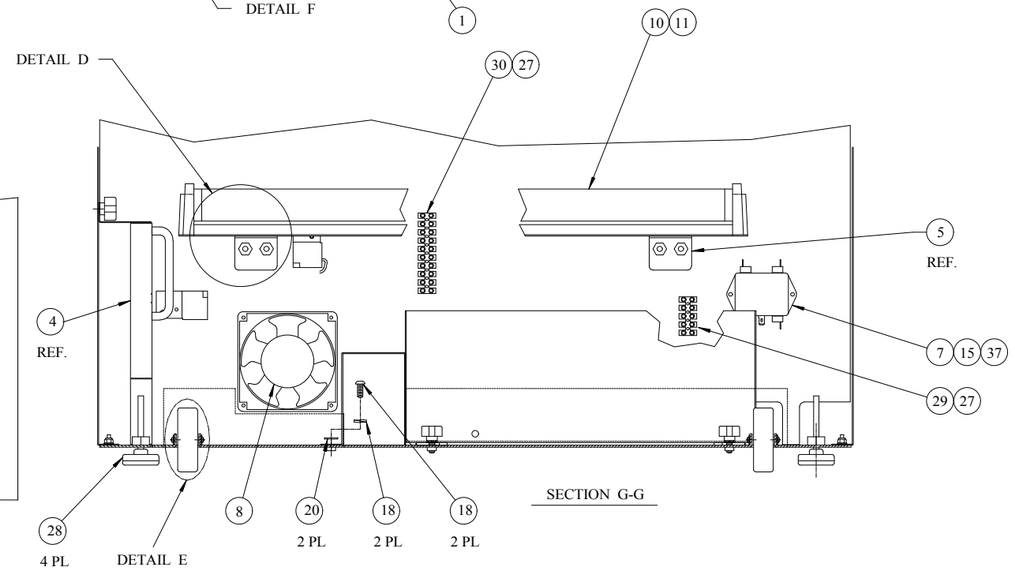
5 Layouts and Diagrams - Version 2

Main Assembly



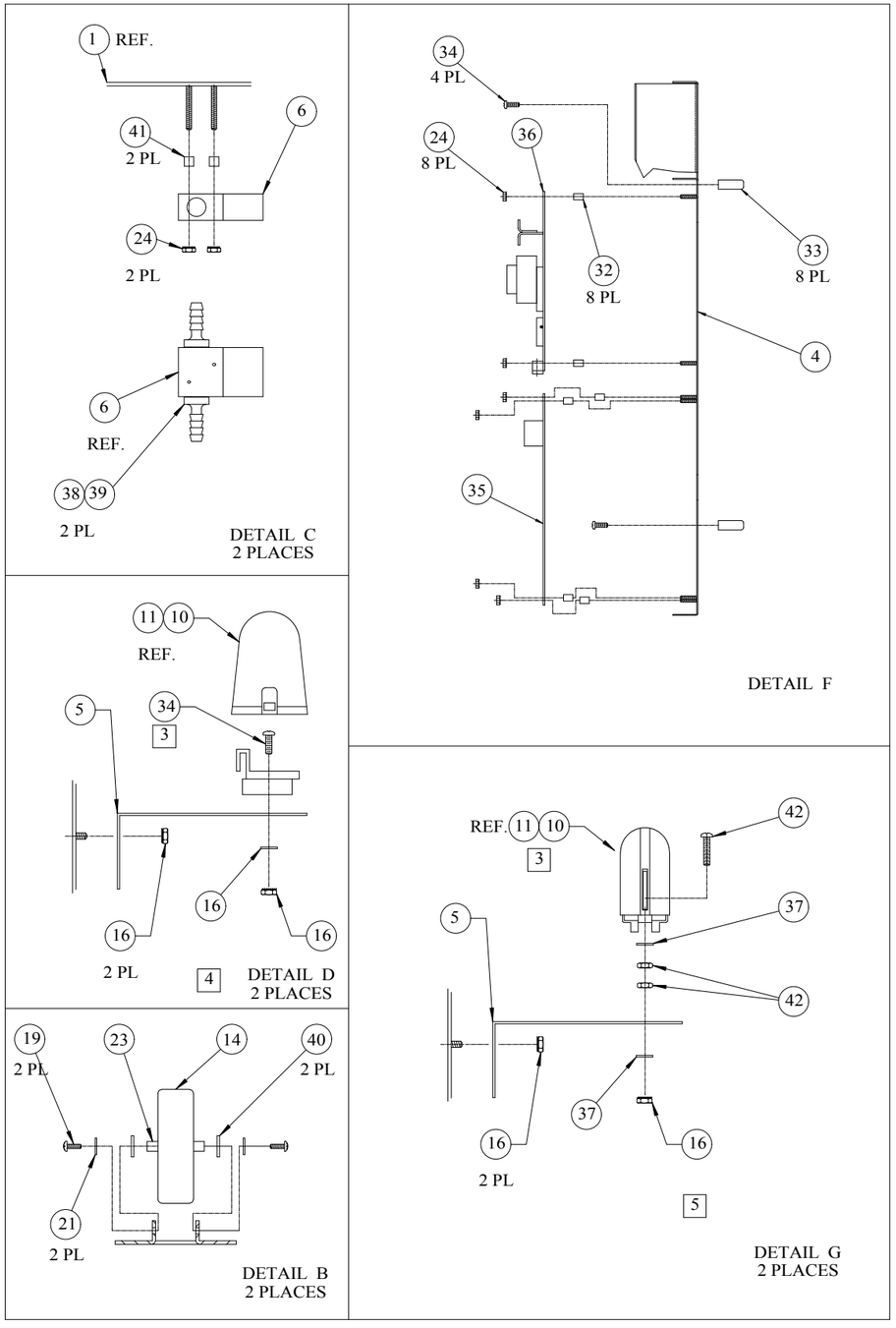






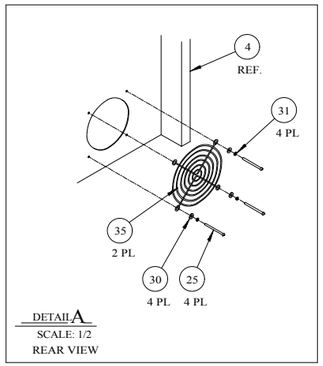
continued on next page

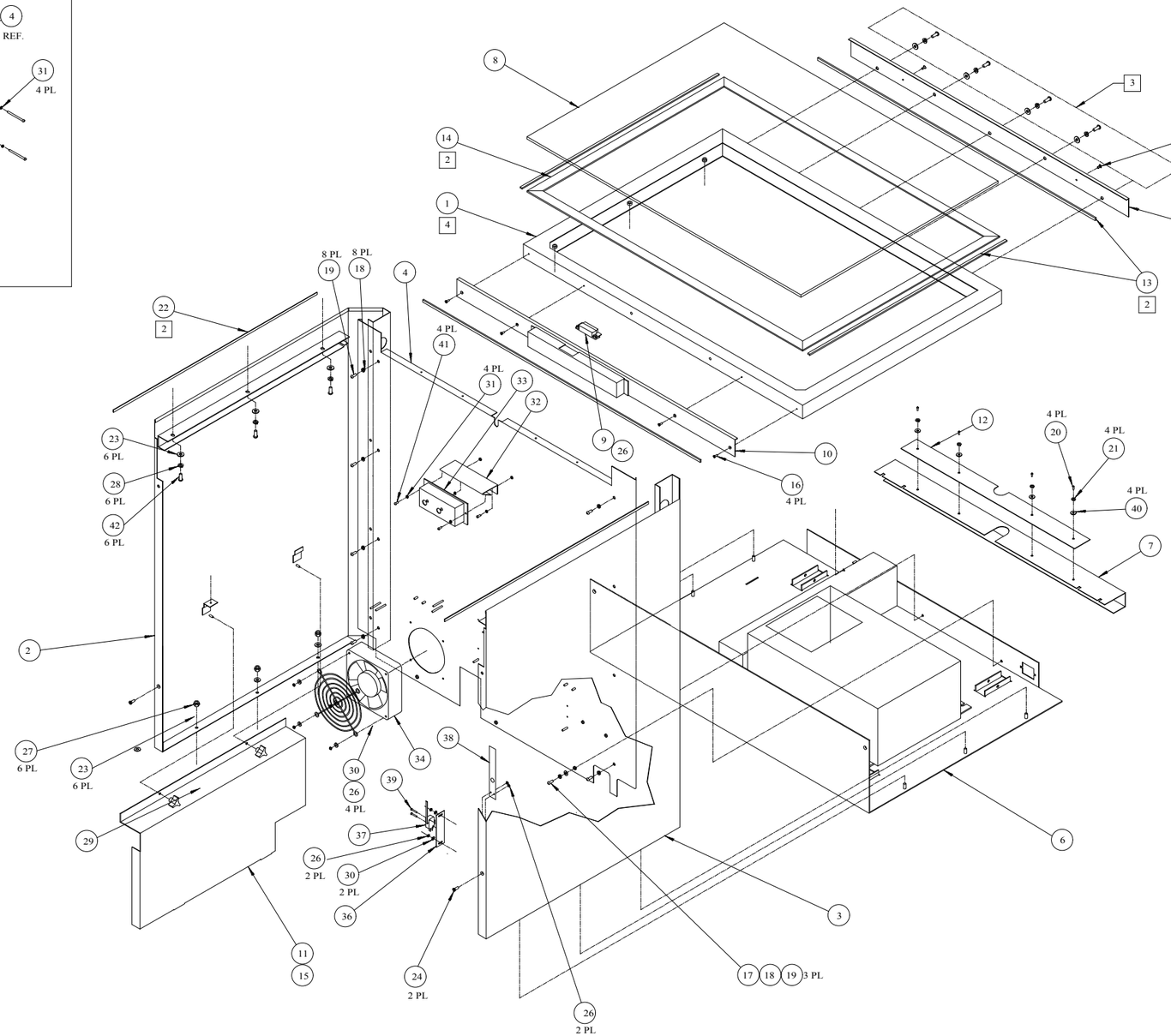
Main Assembly - cont.



ITM	QTY	DESCRIPTION - D5048	PART NO.
42	2	#8-32 x .75 PHIL PAN HD	41-08PPS.75
41	4	#6 x .25 RD. SPACER	42HHS8501
40	8	WASHER, NYLON	44WFN02
39	-	TAPE, TEFLON	81TAP12
38	4	HOSE ADAPTER, 1/8x5/16	44ADT05
37	10	#8 FLAT WASHER	41-08WFR
36	1	ASSEMBLY, PCB I/O CONTROL	64CT484V03
35	1	ASSEMBLY, PCB MAIN	64MI441E-T
34	6	8-32 X .50 PHIL PAN HD	41-08PPS.50
33	2	HANDLE, PLASTIC	44HDL01
32	8	#6 X .375 ROUND SPACER	42HHS8502
31	1	HOLDER, CONNET./FUSE	SEE BOM
30	1	TERMINAL STRIP, 30A 10 POS.	52TS37
29	1	TERMINAL STRIP, 30A 5 POS.	52TS38
28	4	LEVEL LEG, GLIDE	4LEG02
27	4	#6-32 x .50 PHIL PAN HD	41-06PPS.50
26	4	THUMB, KNOB	45KOB06
25	10	1/4 SPLIT LOCK WASHER	41-F0WLS
24	12	#6-32 HEX KEP NUT	41-06NKP
23	4	#6x1.25 ROUND THREAD SPACER	42HHS8348
22	4	1/4-20x.50 PHIL FLAT 100°	41-40SFO.50
21	8	#6 FLAT WASHER	41-06WFR
20	8	1/4 FLAT WASHER	41-40WFR
19	8	6-32 X 3/8 PHIL PAN HD	41-06PPS.37
18	6	1/4-20x.62 SOCKET CAP SCREW	41B40SHC.62
17	4	#10 SPLIT LOCK WASHER	41 10WLS
16	4	#8-32 KEP NUT	41 08NKP
15	2	#8-32 x .38 PHIL PAN HD	41-08PPS.38
14	4	WHEEL, CASTER	49C4R
13	1	ASSEMBLY PUMP	SEE BOM
12	1	PRINTING LIGHT	SEE BOM
11	1	LAMP, SAFETY (YELLOW)	SEE BOM
10	1	LIGHT FIXTURE, 24"	SEE BOM
9	4	ISOLATION MOUNT, 8-32	44MNT05
8	1	BLOWER, EXHAUST	39CFN05
7	1	FILTER, LINE POWER	29PLF01
6	2	SOLENOID VALVE	SEE BOM
5	2	BRACKET, WORKLIGHT	11D3591A62
4	1	COVER, PCB OV29	11D3413A17
3	2	THUMB, KNOB	45KOB05
2	2	BRACKET, LAMPHEAD	11D1125
1	1	BASE	11D4961A20

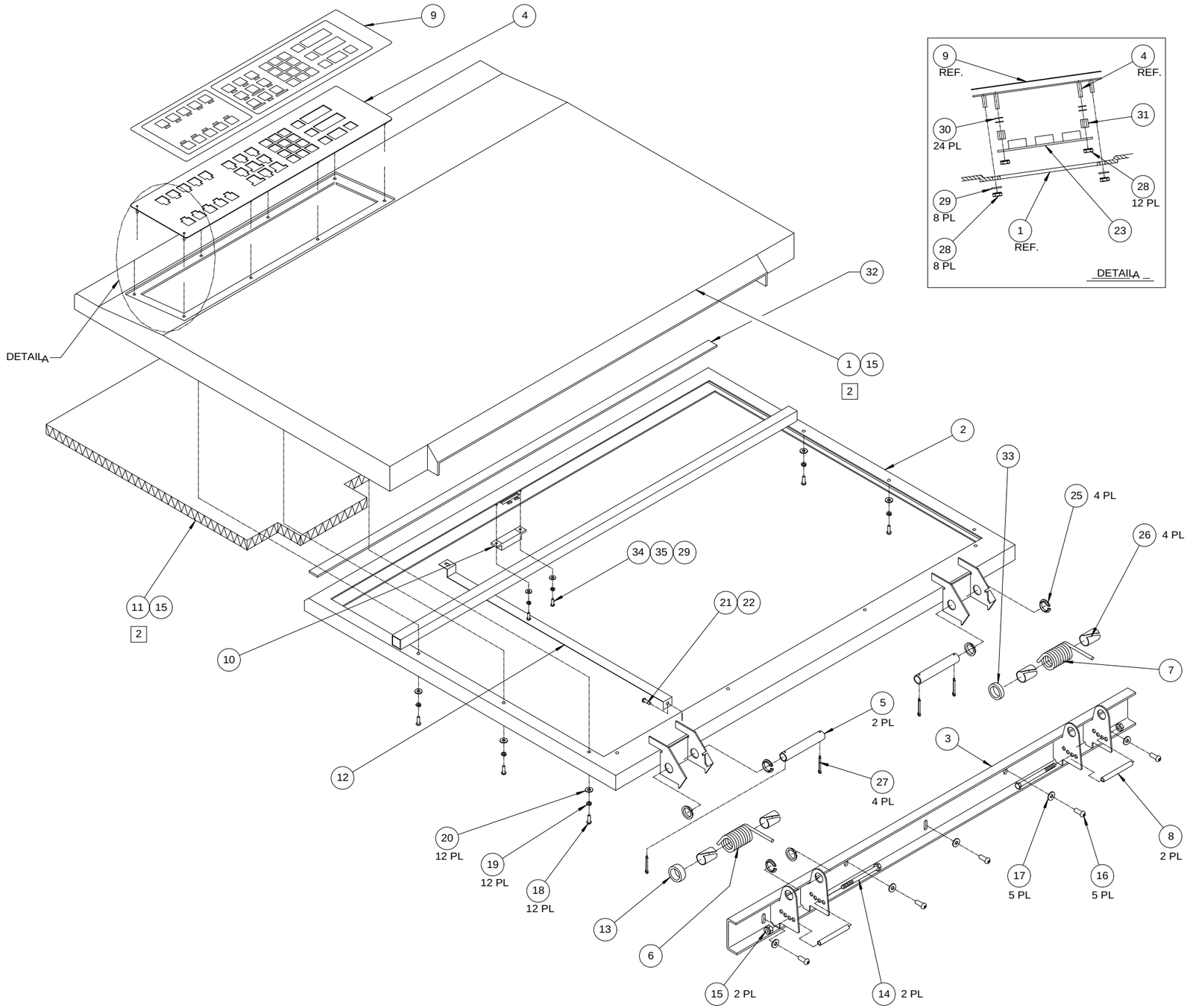
Lower Section Assembly





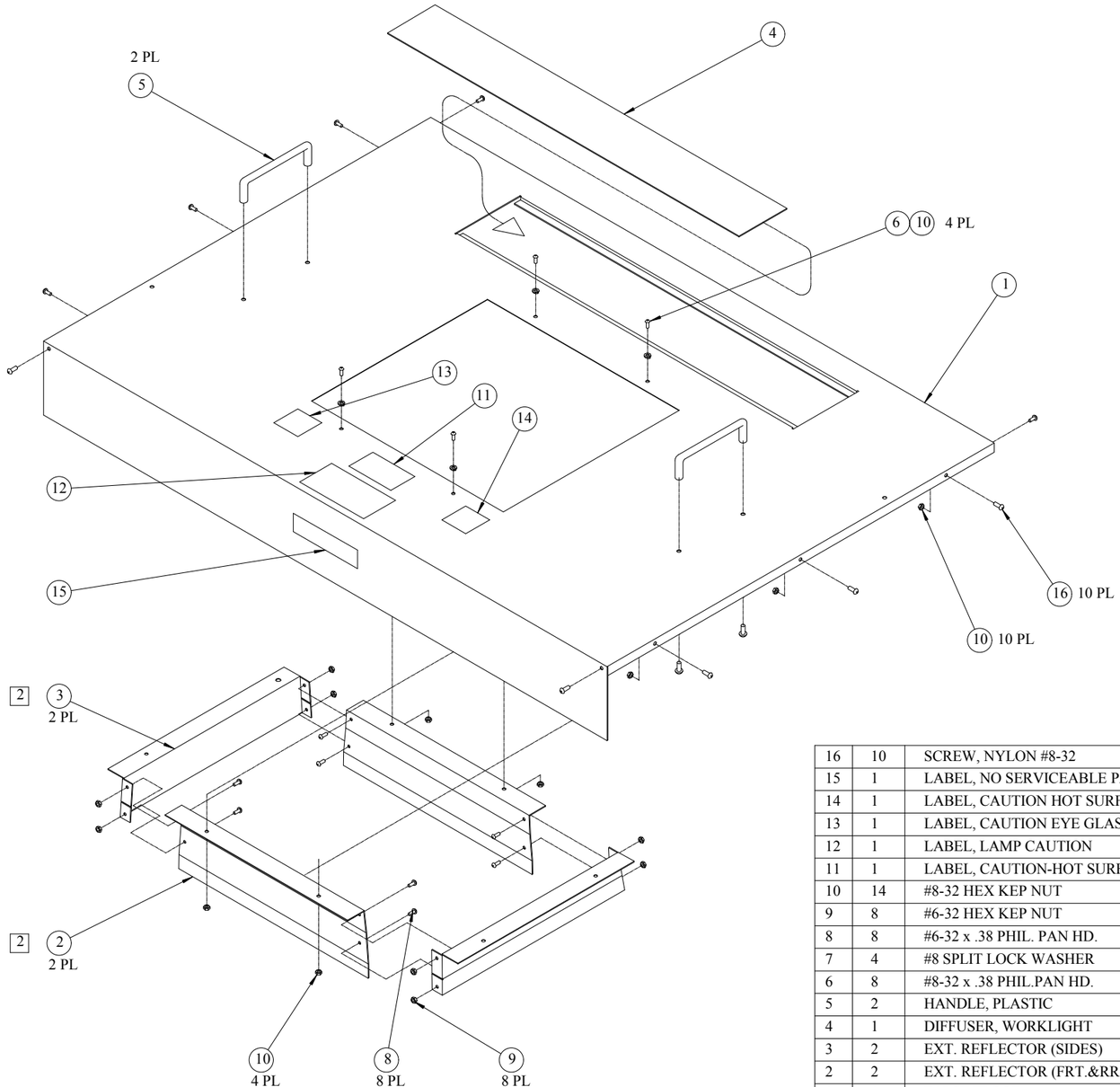
ITEM	QTY	DESCRIPTION - D5050	PART NO.
42	6	#1/4-20 x .62 SOC. BTN HD.	41B40SHC.62
41	4	#6-32x.38 PHIL PAN HD.	41 06PPS.37
40	8	#8 FLAT WASHER	41B08WFR
39	2	#4-40x3/4 PHIL FLAT HD.	41 04PPS.75
38	1	SPRING PLATE, SWITCH	11D2011A99
37	1	SWITCH, TIMING - 2.5 LEVER	55SW17
36	1	BRACKET, SWITCH MOUNT	11D3521A62
35	2	GUARD BLOWER FAN	13FGD01
34	1	BLOWER, FAN	39CFN01
33	1	PHOTOCELL	SEE BOM
32	1	MOUNT PHOTOCELL	11D1183
31	8	#6 SPLIT LOCK WASHER	41 06WLS
30	10	#6 FLAT WASHER	41 06WFR
29	2	KNOB, LITE STD.	45KOB06
28	6	1/4 SPLIT LOCK WASHER	41 40WLS
27	6	1/4 NYLON NUT	441B40NLN
26	10	#6-32 KEP NUT	41 06NKP
25	4	#6-32 X 2.0 PHIL PAN HD	41-06PPS2.00
24	2	#10-32x.38 PHIL FLAT HD 100°	41 12PF0.37
23	12	1/4 FLAT WASHER	41 40WFR
22	48"	TAPE, GASKET 1/4"	44GKT11
21	4	#8 SPLIT LOCK WASHER	41 08WLS
20	4	#8-32x.37 PHIL FLAT HD.	41 08PPS.37
19	11	#10-32x.37 PHIL PAN HD	41 12PPS.37
18	11	#10 SPLIT LOCK WASHER	41 10WLS
17	3	#10 FLAT WASHER	41 10WFR
16	10	#6-32x.38 PHIL FLAT HD. 100°	41B06PF0.37
15	1	PCB SET, OV34	64PCB-OV34
14	127"	TAPE, GLASS CUSHION 1/8 x 1	81TAP07
13	127"	TAPE, GLASS CUSHION 1/8 x 1/4	81TAP06
12	1	COVER, REAR UPPER	11D3579A02
11	1	COVER, PCB	11D3413A17
10	1	GLASS HOLDER, FRONT	11D3291A02
9	1	MAGNETIC SWITCH	55SW50
8	1	GLASS, PANE	18D3292A00
7	1	COVER, VACUUM LINE	11D3520A00
6	1	ASSEMBLY, BASE	68D5048A00
5	1	TRIM, GLASS - REAR	11D3288A02
4	1	REAR PANEL	11D4960A20
3	1	SIDE PANEL, RIGHT	11D3283B20
2	1	SIDE PANEL, LEFT	11D3283A20
1	1	GLASS FRAME	11D3287A02

LLid Assembly



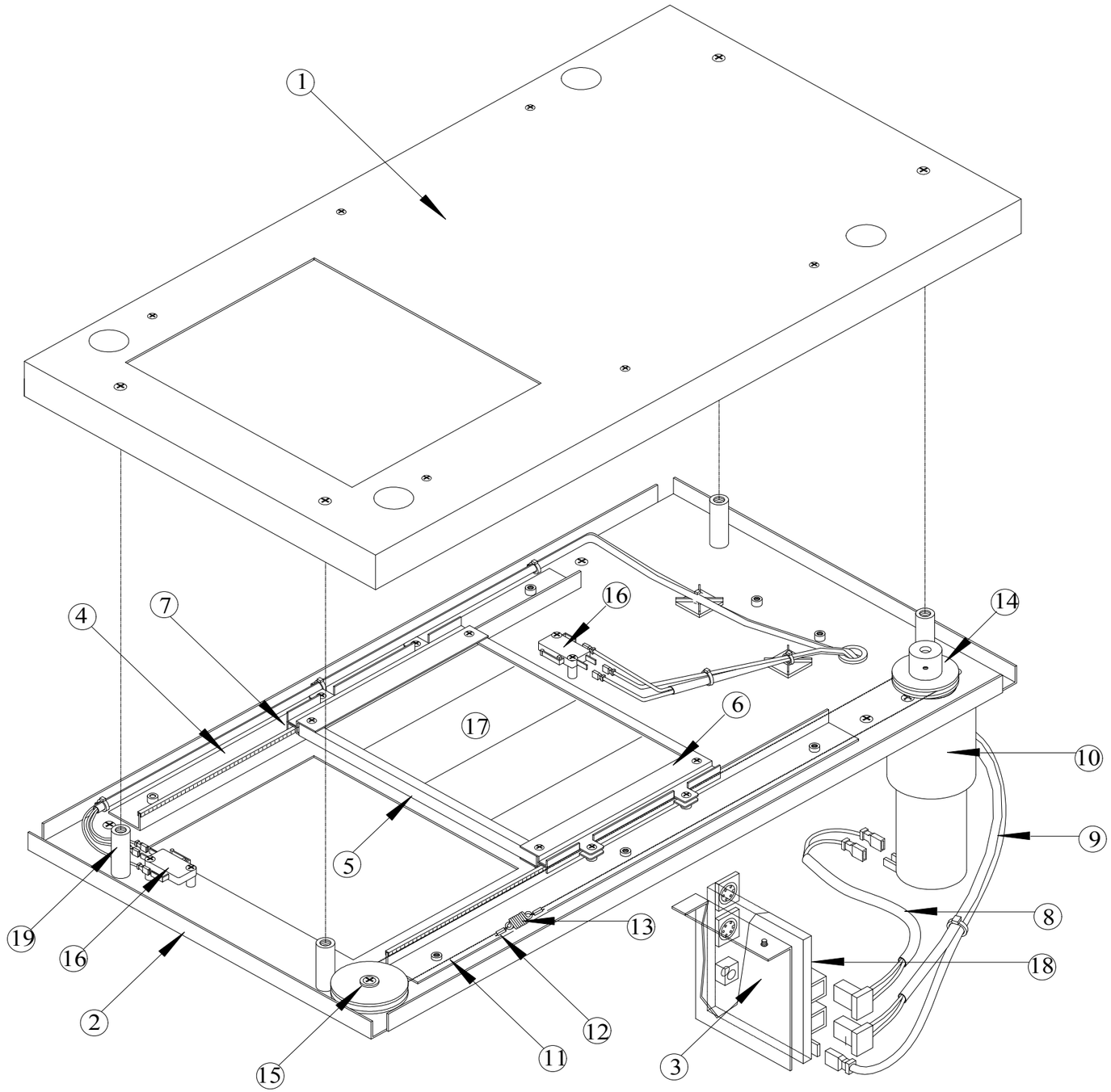
ITEM	QTY	DESCRIPTION D5049	PART NO.
		PARTS LIST	
35	2	#6-32 WASHER, SPLIT LOCK	41-06WLS
34	2	#6-32 x .50 PHIL PAN HD.	41B06PPS.50
33	1	SPACER, NARROW (SPRING)	12D4564A62
32	3 ft.	TAPE, DOUBLE SIDED 3/4"	81TAP03
31	12	#6-32x.312 STANDOFF, HEX	42HHS9292
30	24	#6 WASHER, STAR INTERNAL	41-06WLI
29	10	#6 WASHER, FLAT	41-06WFR
28	20	#6-32 NUT, HEX KEP	41-06NKP
27	4	COTTER PIN ø.093	41-03PCT1.0
26	4	BEARING, SLEEVE	43BLB07
25	4	BEARING, SNAP IN	43BLB08
24	1	ADHESIVE, SPRAY	82ADH15
23	1	PCB SET (DISPLAY, MEMORY)	64PCB-OV29
22	1	#8 WASHER, EXTERNAL LOCK	41-08WLX
21	1	#8-32x.38 PHIL PAN HD.	41B08PPS.38
20	12	#10 WASHER, FLAT SAE	41B10WFR
19	12	#10 WASHER, SPLIT LOCK	41-10WLS
18	12	#10-32x.38 PHIL PAN HD.	41B12PPS.38
17	5	#1/4 WASHER, FLAT SAE	41-40WFR
16	5	#1/4-20x.62 SOCKET HD	41BF0SHC.62
15	2	#1/4-20 NUT, HEX LOCK	41B40NLN
14	2	#1/4-20x3.0 HEX HD. BOLT	41-F0BHX3.0
13	1	SPACER, SPRING	12D2962A62
12	1	GROUND STRAP, NARROW	11D2351A00
11	1	HONEYCOMB, LARGE	13D3422A00
10	1	MAGNETC, SWITCH	55SW50
9	1	OVERLAY	SEE BOM
8	2	SPACER, TUBING	12D3572A07
7	1	SPRING, TORSION (HEAVY)	12D3527A00
6	1	SPRING, TORSION (SOFT)	12D2961A00
5	2	PIN, HINGE	12D1675A99
4	1	BEZEL, INTEGRATOR	11D3419A20
3	1	BRACKET, HINGE	11D3281A02
2	1	FRAME, LID	11D3420A02
1	1	SHELL, LID	13D3293A00

False Floor Assembly



ITEM	QTY	DESCRIPTION D3584	PART NO.
16	10	SCREW, NYLON #8-32	41N08SPS.25
15	1	LABEL, NO SERVICEABLE PARTS	15D3522A00
14	1	LABEL, CAUTION HOT SURFACE	15D2527A00
13	1	LABEL, CAUTION EYE GLASSES	15D2516A00
12	1	LABEL, LAMP CAUTION	15D2323
11	1	LABEL, CAUTION-HOT SURFACE	15D1857A00
10	14	#8-32 HEX KEP NUT	41 08NKP
9	8	#6-32 HEX KEP NUT	41 06NKP
8	8	#6-32 x .38 PHIL. PAN HD.	41 06PPS.37
7	4	#8 SPLIT LOCK WASHER	41 08WLS
6	8	#8-32 x .38 PHIL.PAN HD.	41 08PPS.37
5	2	HANDLE, PLASTIC	44HDL01
4	1	DIFFUSER, WORKLIGHT	18D2867A00
3	2	EXT. REFLECTOR (SIDES)	11D2827A07
2	2	EXT. REFLECTOR (FRT.&RR.)	11D2826A07
1	1	FALSE FLOOR	11D2843A00

Motorized Sliding Single Filter Assembly



PARTS LIST

ITEM	DESCRIPTION	OLEC PART NO.	QTY
1	COVER, FILTER HOUSING	11D5055A02	1
2	BASE, FILTER HOUSING	11D5056A02	1
3	BRACKET, PCB , MOUNTING	11D5057A02	1
4	RAIL, FILTER PLATE	11D5058A62	4
5	FRAME, FORWARD FILTER	11D5059A62	2
6	FRAME, FILTER TOP	11D5060A62	2
7	FRAME, FILTER BOTTOM	11D5064A62	2
8	CABLE, MOTOR-DEFUSER	16D3337A00	1
9	CABLE, SWITCH FILTER	16D5066A00	1
10	MOTOR, AL13/14	31MOT11	1
11	MINIATURE CABLE, STAINLESS	43CAB01	1 x 3'
12	LOOP SLEEVE, CABLE, 027-.0	43SLV01	2
13	FRICTION SPRING	43SPR03	1
14	FRICTION DRIVE WHEEL	49DWH01	1
15	NYLON IDLER PULLEY	49PUL01	1
16	SWITCH, TIMING - ROLLER	55SW02	2
17	ASSEMBLY, KOKOMO ROT FILTER	632554A00	1
18	CHG DIFFUSER CONTROL PCB	64DC447-T	1
19	STANDOFF, THREADED, 8-32 x 1 1/8"	42HHS8440R	4

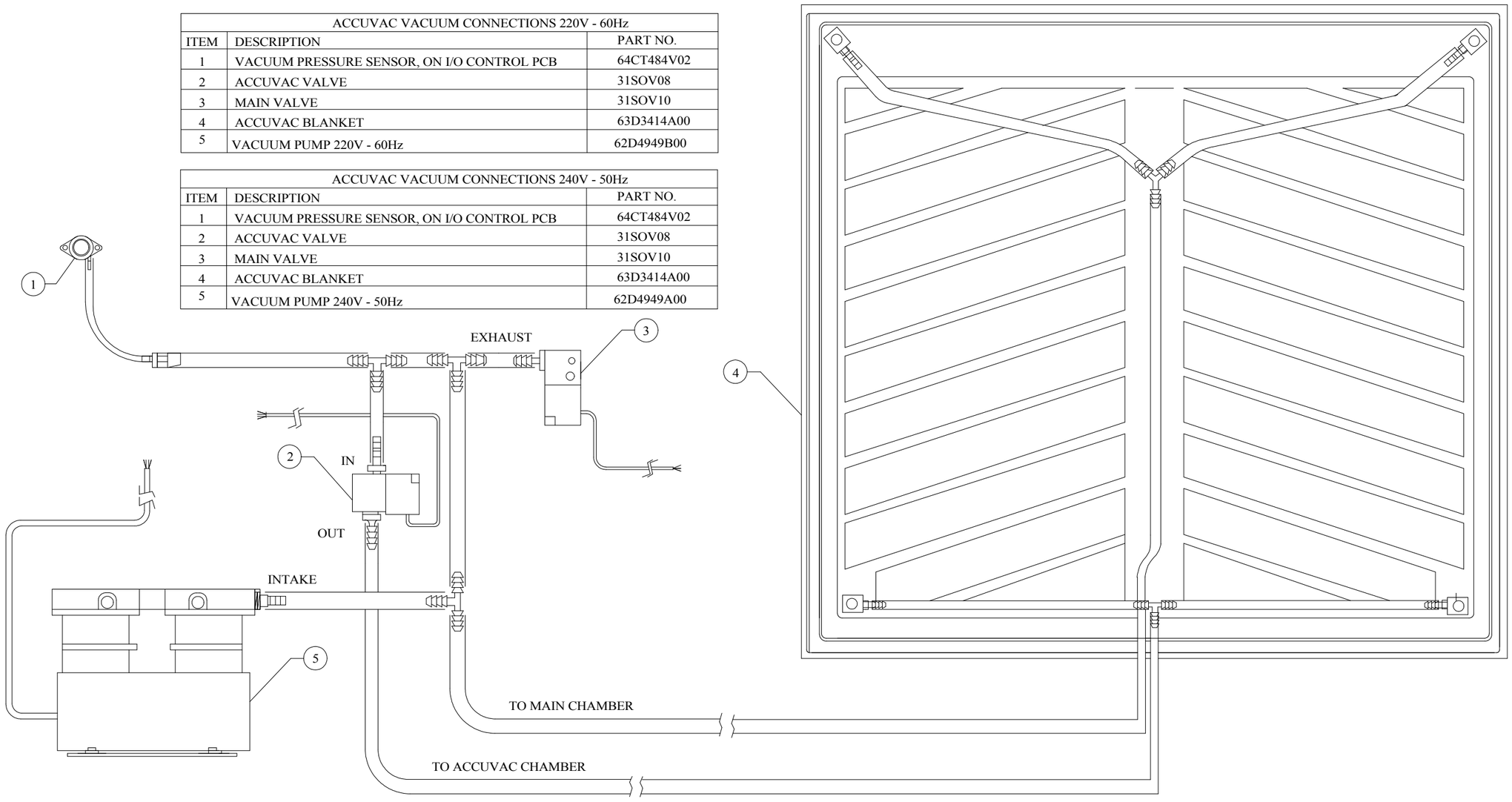
Connection Diagrams

Accuvac Vacuum Connections

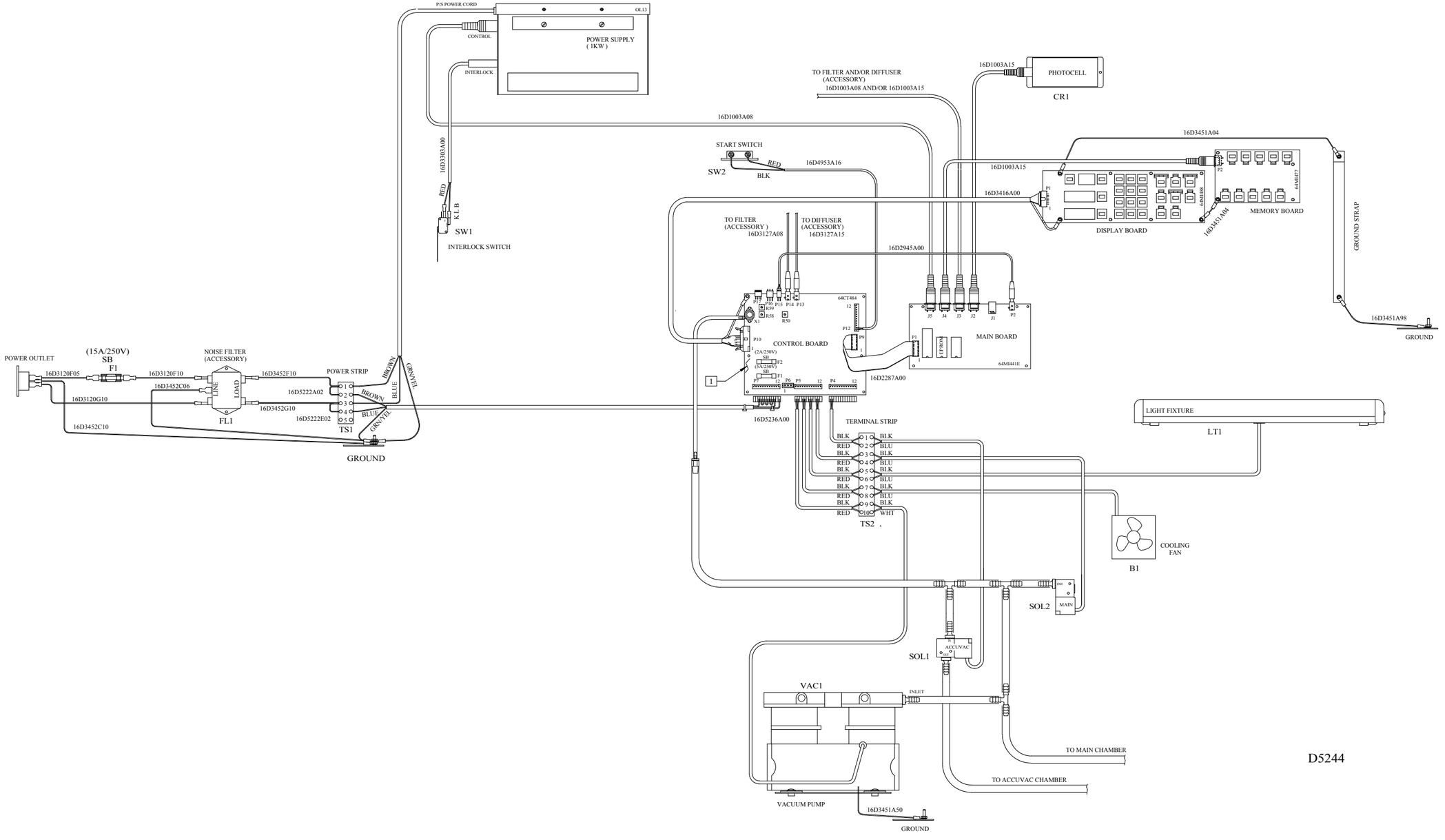
ACCUVAC VACUUM CONNECTIONS 120V - 60Hz		
ITEM	DESCRIPTION	PART NO.
1	VACUUM PRESSURE SENSOR, ON I/O CONTROL PCB	64CT484V03
2	ACCUVAC VALVE	31SOV08
3	MAIN VALVE	31SOV11
4	ACCUVAC BLANKET	63D3414A00
5	VACUUM PUMP, 120V - 60Hz	62D4949C00

ACCUVAC VACUUM CONNECTIONS 220V - 60Hz		
ITEM	DESCRIPTION	PART NO.
1	VACUUM PRESSURE SENSOR, ON I/O CONTROL PCB	64CT484V02
2	ACCUVAC VALVE	31SOV08
3	MAIN VALVE	31SOV10
4	ACCUVAC BLANKET	63D3414A00
5	VACUUM PUMP 220V - 60Hz	62D4949B00

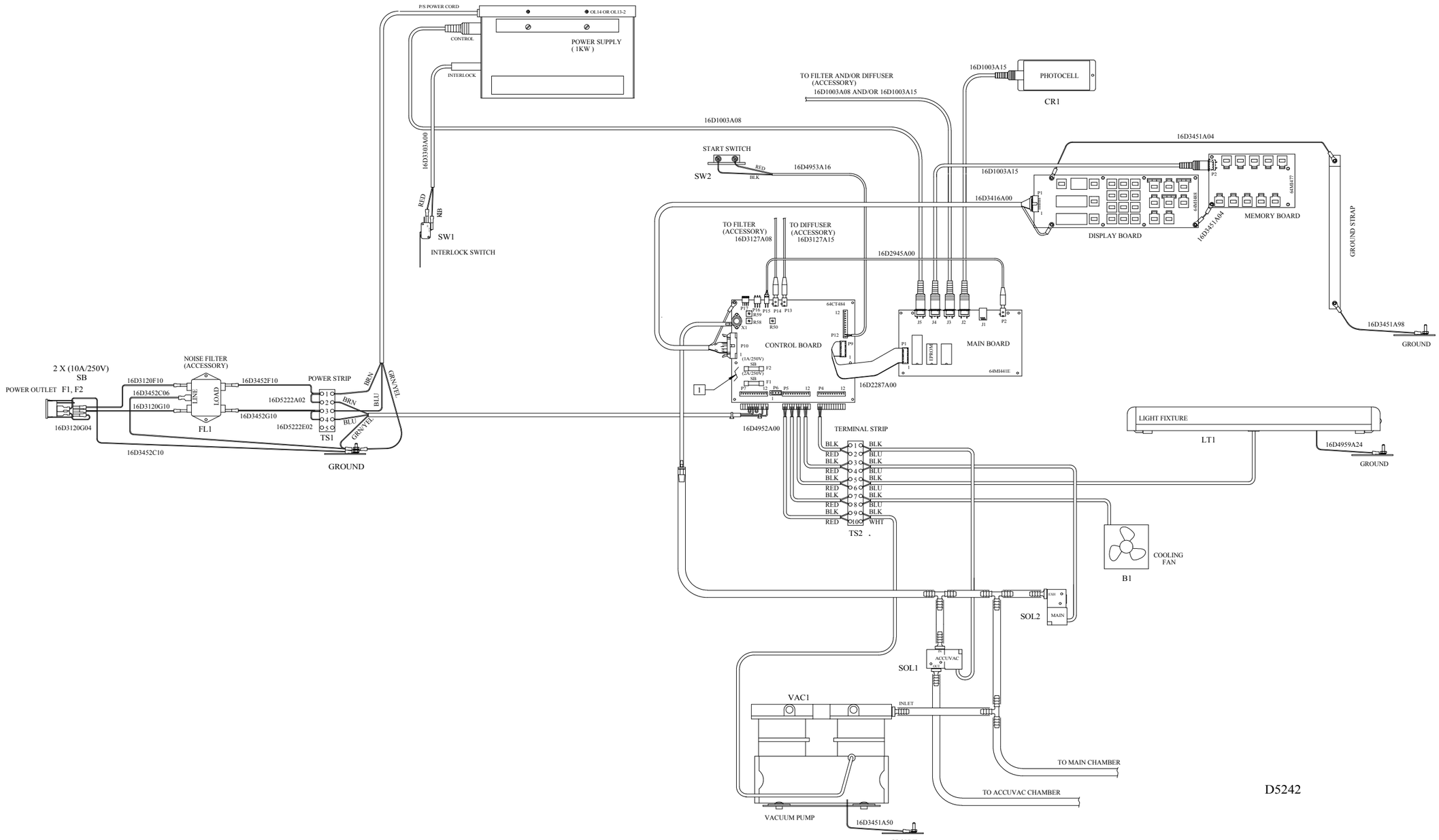
ACCUVAC VACUUM CONNECTIONS 240V - 50Hz		
ITEM	DESCRIPTION	PART NO.
1	VACUUM PRESSURE SENSOR, ON I/O CONTROL PCB	64CT484V02
2	ACCUVAC VALVE	31SOV08
3	MAIN VALVE	31SOV10
4	ACCUVAC BLANKET	63D3414A00
5	VACUUM PUMP 240V - 50Hz	62D4949A00



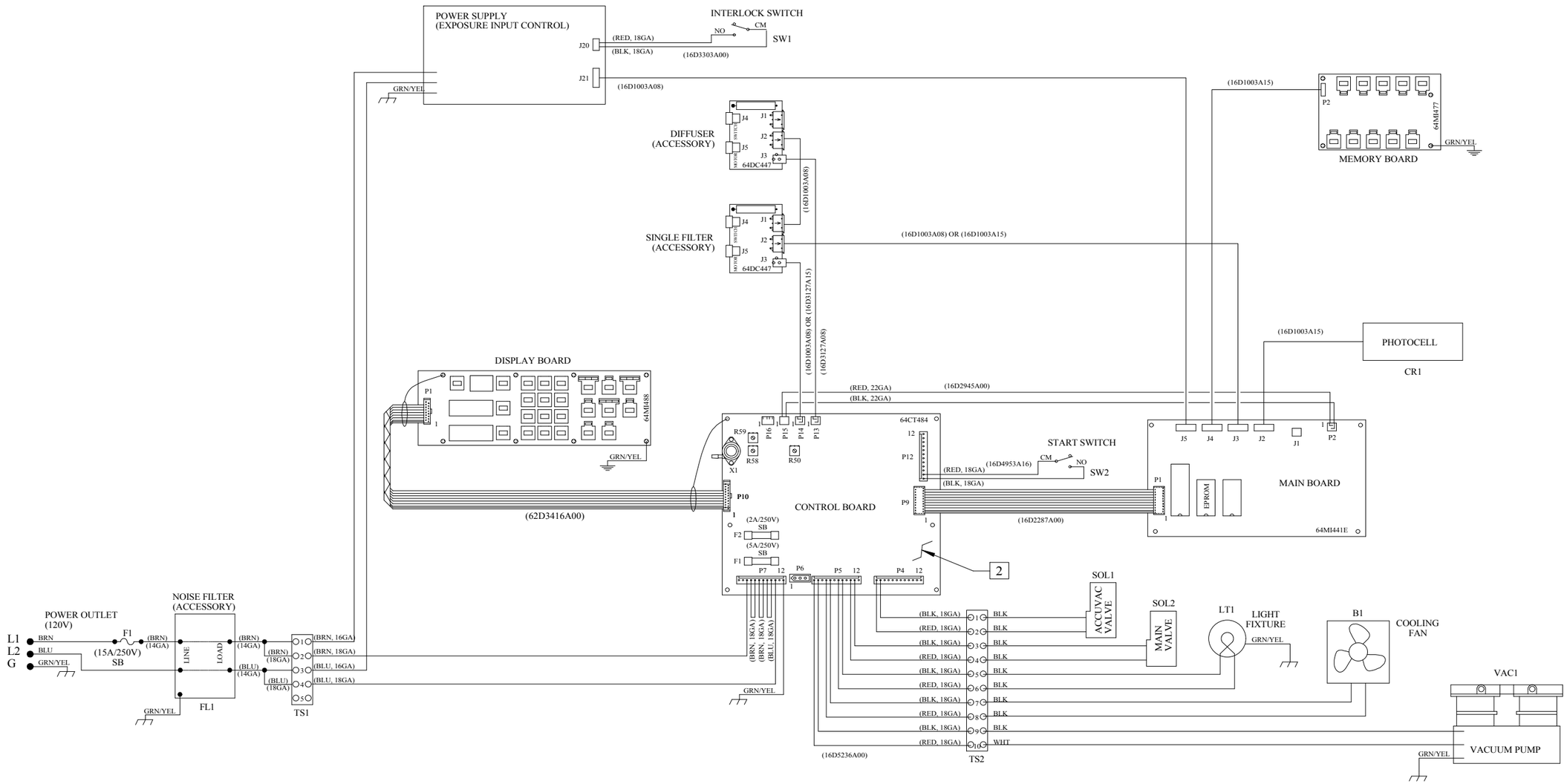
Cable Connections - 120V



Cable Connections - 220V

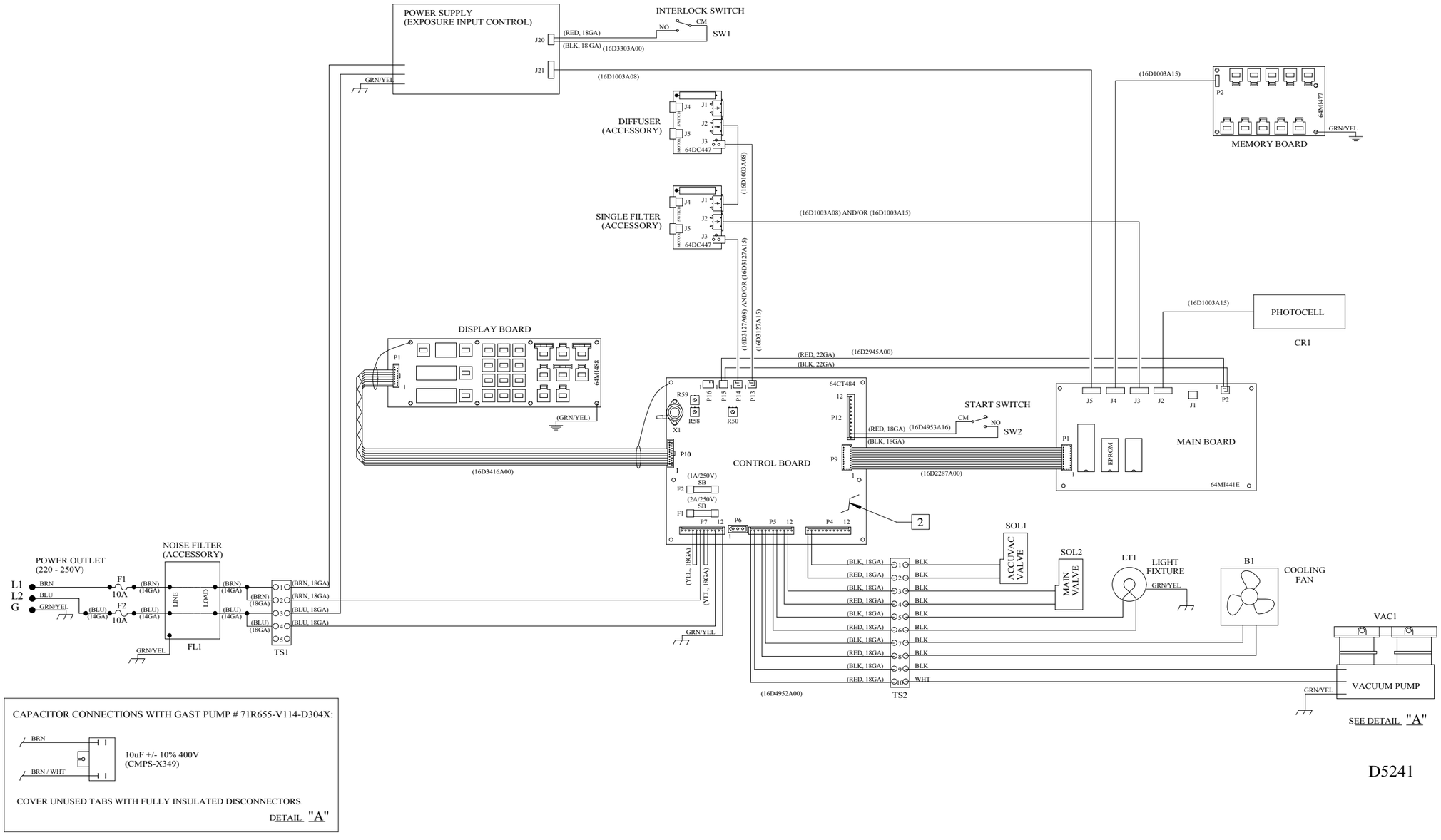


Wiring Connections - 120V



D5243

Wiring Connections - 220V



D5241

Single Filter Wiring Diagram

REAR VIEW OF SINGLE FILTER

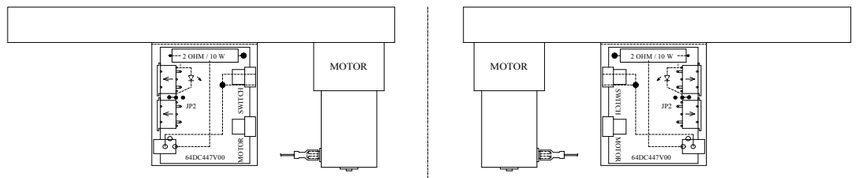
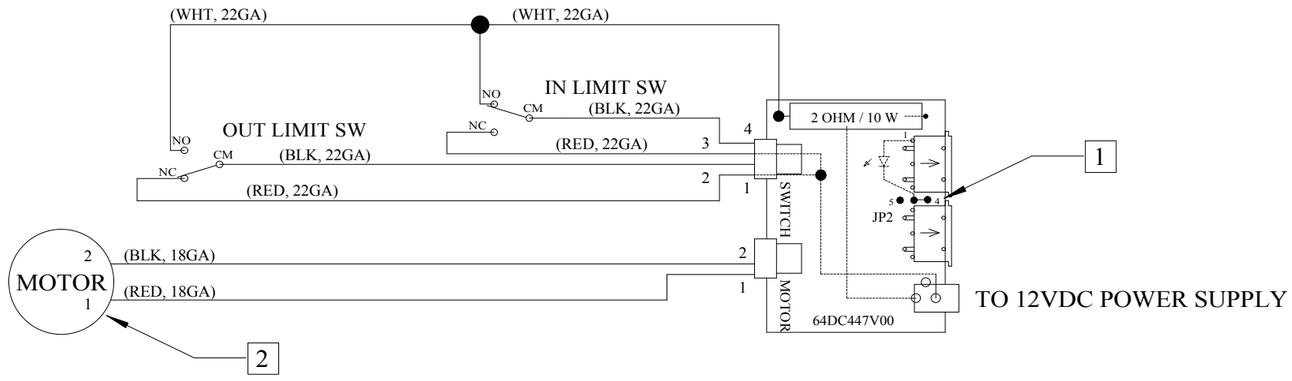


FIGURE "A"

FIGURE "B"

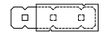


2. THIS DIAGRAM SHOWS THE CONNECTIONS TO THE MOTOR IN THE FILTER ASSEMBLY AS IN FIGURE "B".

   FOR FILTER ASSEMBLY AS IN FIGURE "A", THE RED WIRE IS CONNECTED TO PIN 2 AND THE BLACK WIRE TO PIN 1.

1. PLACE JUMPER JP2 ON PCB AS SHOWN IN DETAIL "A".

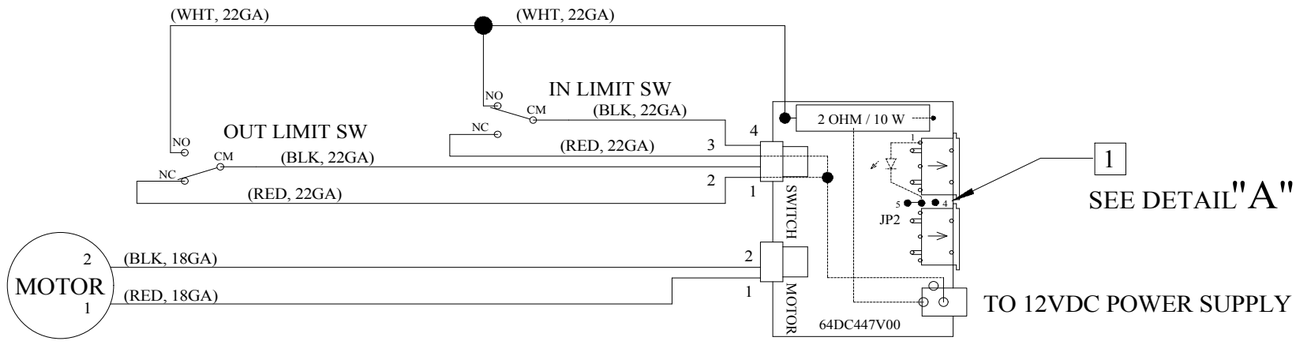
NOTES: UNLESS OTHERWISE SPECIFIED D5068



JP2

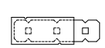
DETAIL "A"

Motorized Diffuser Wiring Diagram



1. PLACE JUMPER JP2 ON PCB AS SHOWN IN DETAIL "A".

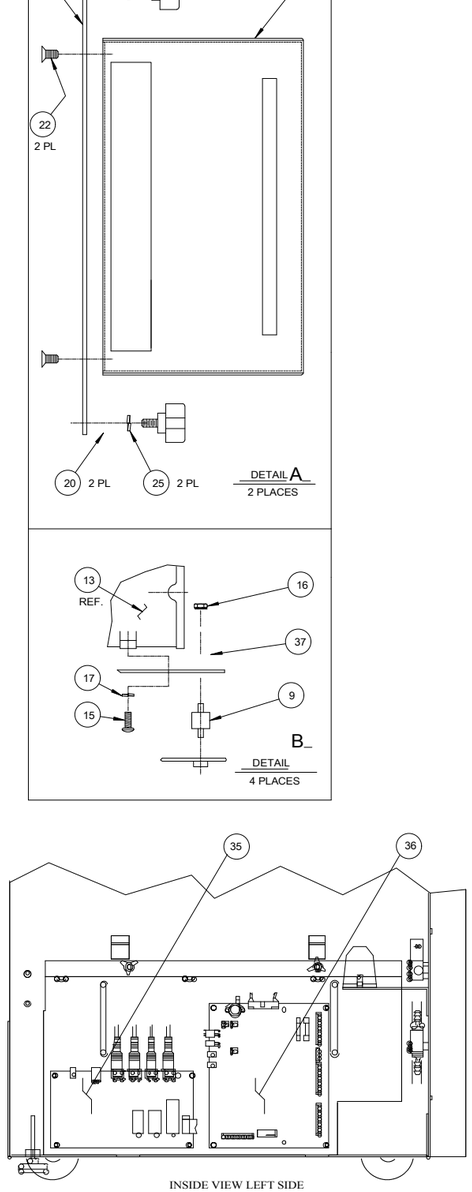
NOTES: UNLESS OTHERWISE SPECIFIED.

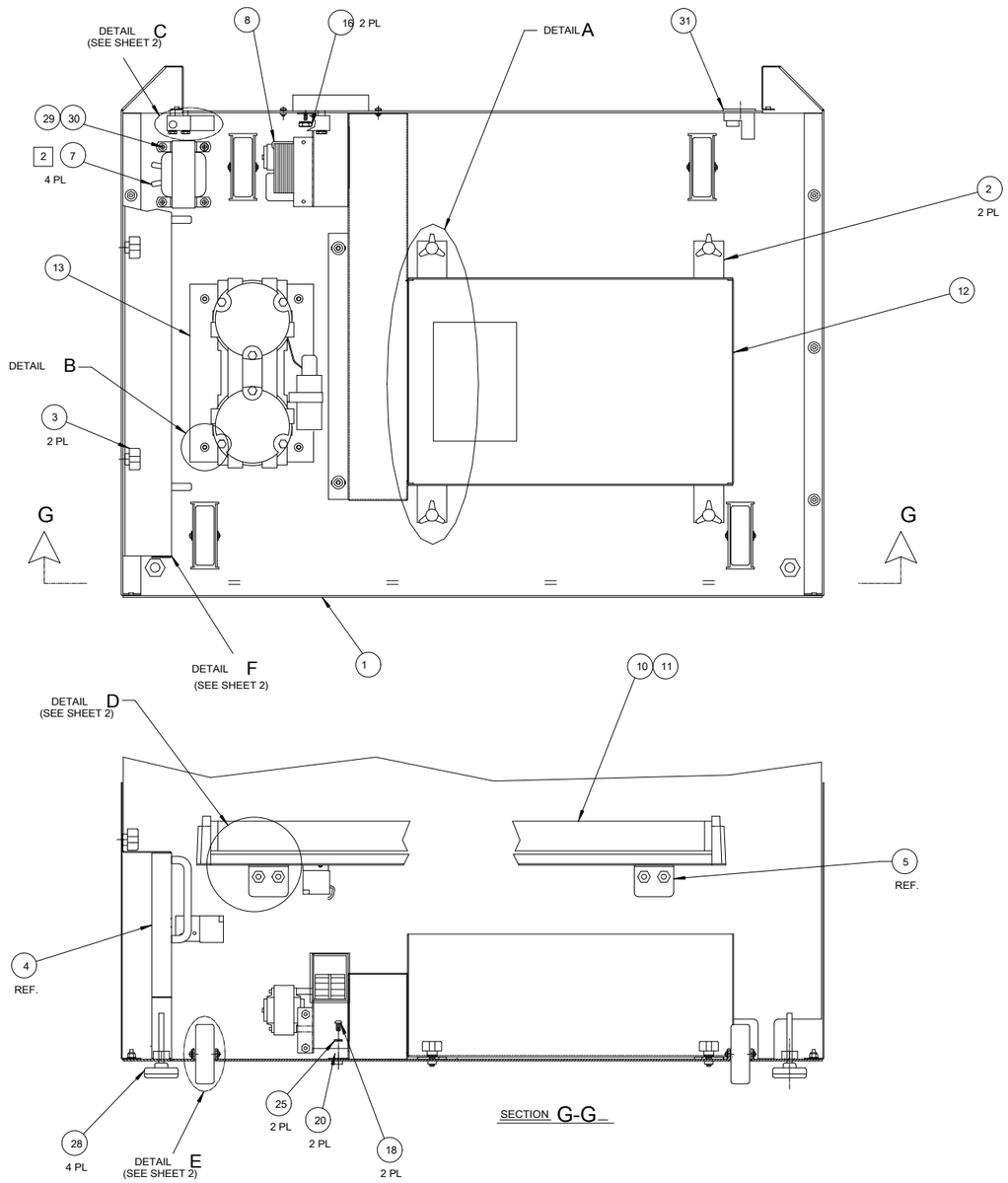


JP2

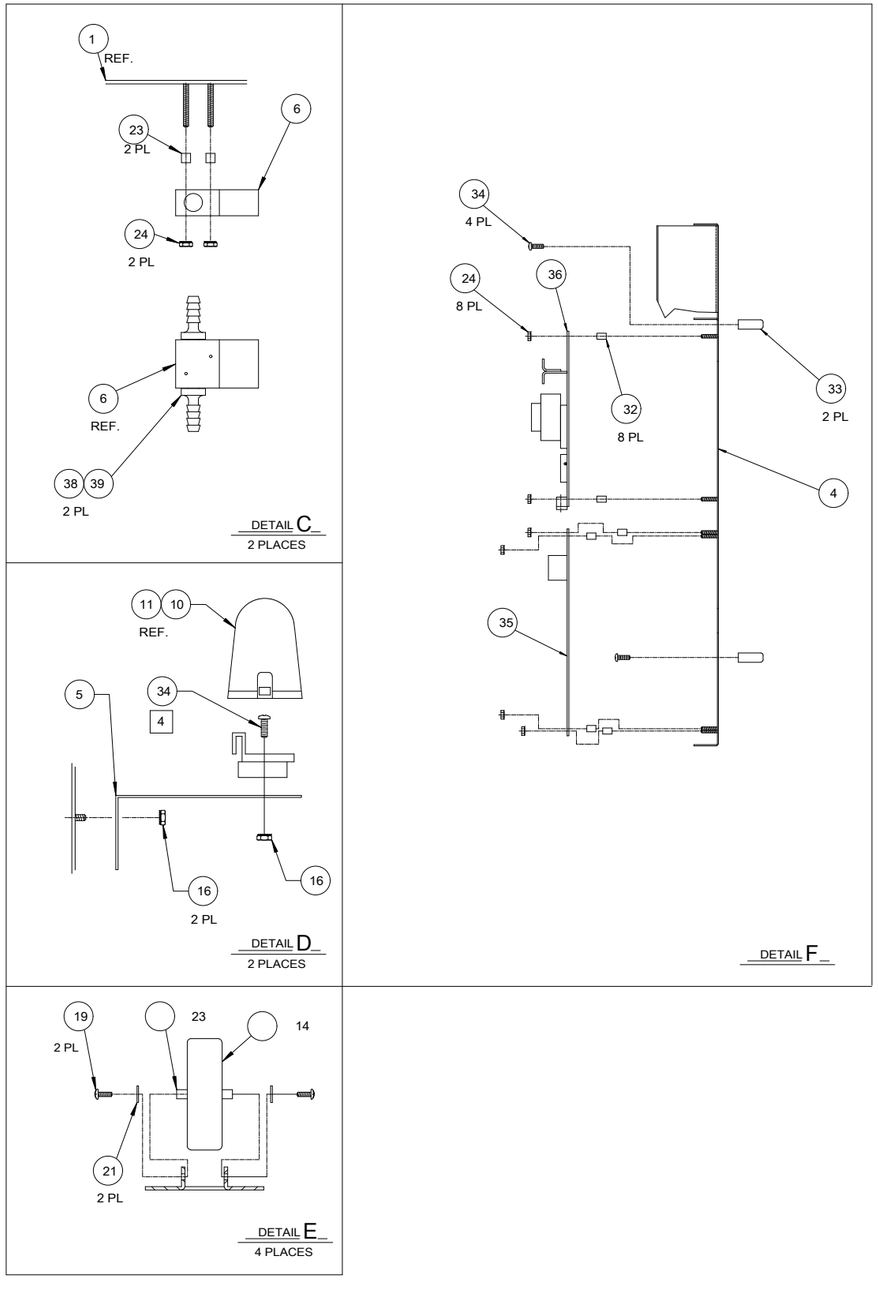
DETAIL "A"

Main Assembly



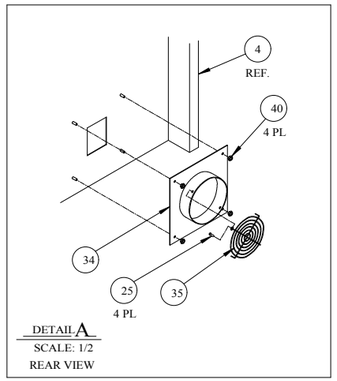


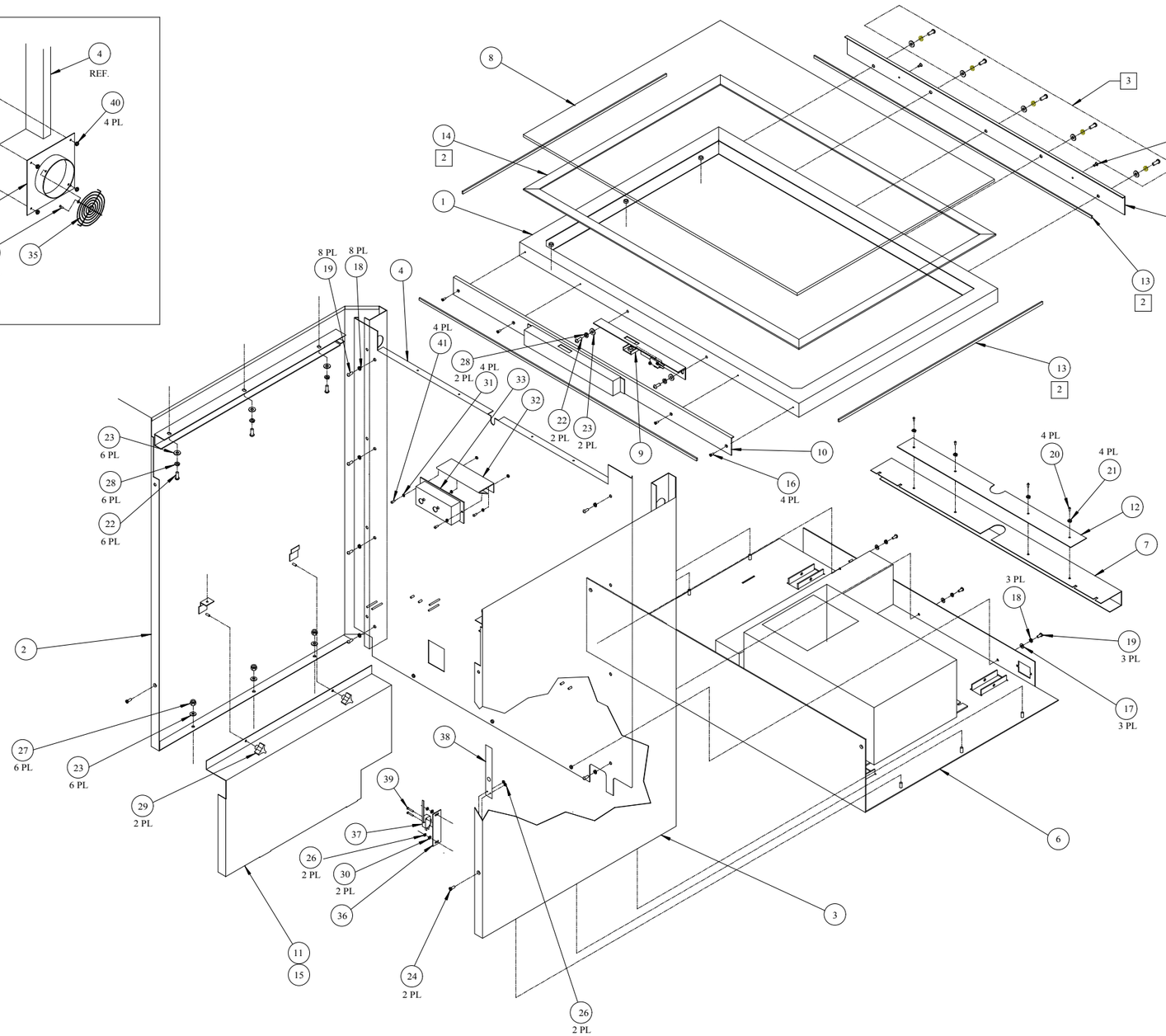
Main Assembly -cont.



ITEM	QTY	DESCRIPTION D3629	PART NO.
39	-	TAPE, TEFLON	81TAP12
38	4	HOSE ADAPTER, 1/8x5/16	44ADT05
37	4	#8 FLAT WASHER	41-08WFR
36	1	ASSEMBLY, PCB I/O CONTROL	SEE BOM
35	1	ASSEMBLY, PCB MAIN	SEE BOM
34	6	8-32 X .50 PHIL PAN HD	41-08PPS.50
33	2	HANDLE, PLASTIC	44HDL01
32	8	#6 X .375 ROUND SPACER	42HHS8502
31	1	HOLDER, CONNET./FUSE	SEE BOM
30	4	#8 SPLIT LOCK WASHER	41-08WLS
29	4	#8-32x.37 PHIL PAN HD	41-08PPS.38
28	4	LEVEL LEG, GLIDE	4LEG02
27	-		
26	4	THUMB, KNOB	45KOB06
25	6	1/4 SPLIT LOCK WASHER	41-F0WLS
24	12	#6-32 HEX KEP NUT	41-06NKP
23	4	#6x1.25 ROUND THREAD SPACER	42HHS8348
22	4	1/4-20x.50 PHIL FLAT 100°	41-40SFO.50
21	8	#6 FLAT WASHER	41-06WFR
20	4	1/4 FLAT WASHER	41-40WFR
19	8	6-32 X 3/8 PHIL PAN HD	41-06PPS.37
18	2	1/4-20x.62 SOCKET CAP SCREW	41B40SHC.62
17	4	#10 SPLIT LOCK WASHER	41 10WLS
16	6	#8-32 KEP NUT	41 08NKP
15	4	#10-32x.37 PHIL PAN HD	41 12PPS.37
14	4	WHEEL, CASTER	49C4R
13	1	ASSEMBLY PUMP	SEE BOM
12	1	PRINTING LIGHT	SEE BOM
11	1	LAMP, SAFETY (YELLOW)	SEE BOM
10	1	LIGHT FIXTURE, 24"	SEE BOM
9	4	ISOLATION MOUNT, 8-32	44MNT05
8	1	BLOWER, EXHAUST	SEE BOM
7	1	AUTOFORMER, 120-240V	32TRC03
6	2	SOLENOID VALVE	SEE BOM
5	2	BRACKET, WORKLIGHT	11D3591A62
4	1	COVER, PCB OV29	11D3413A17
3	2	THUMB, KNOB	45KOB05
2	2	BRACKET, LAMPHEAD	11D1125
1	1	BASE	11D3280A20

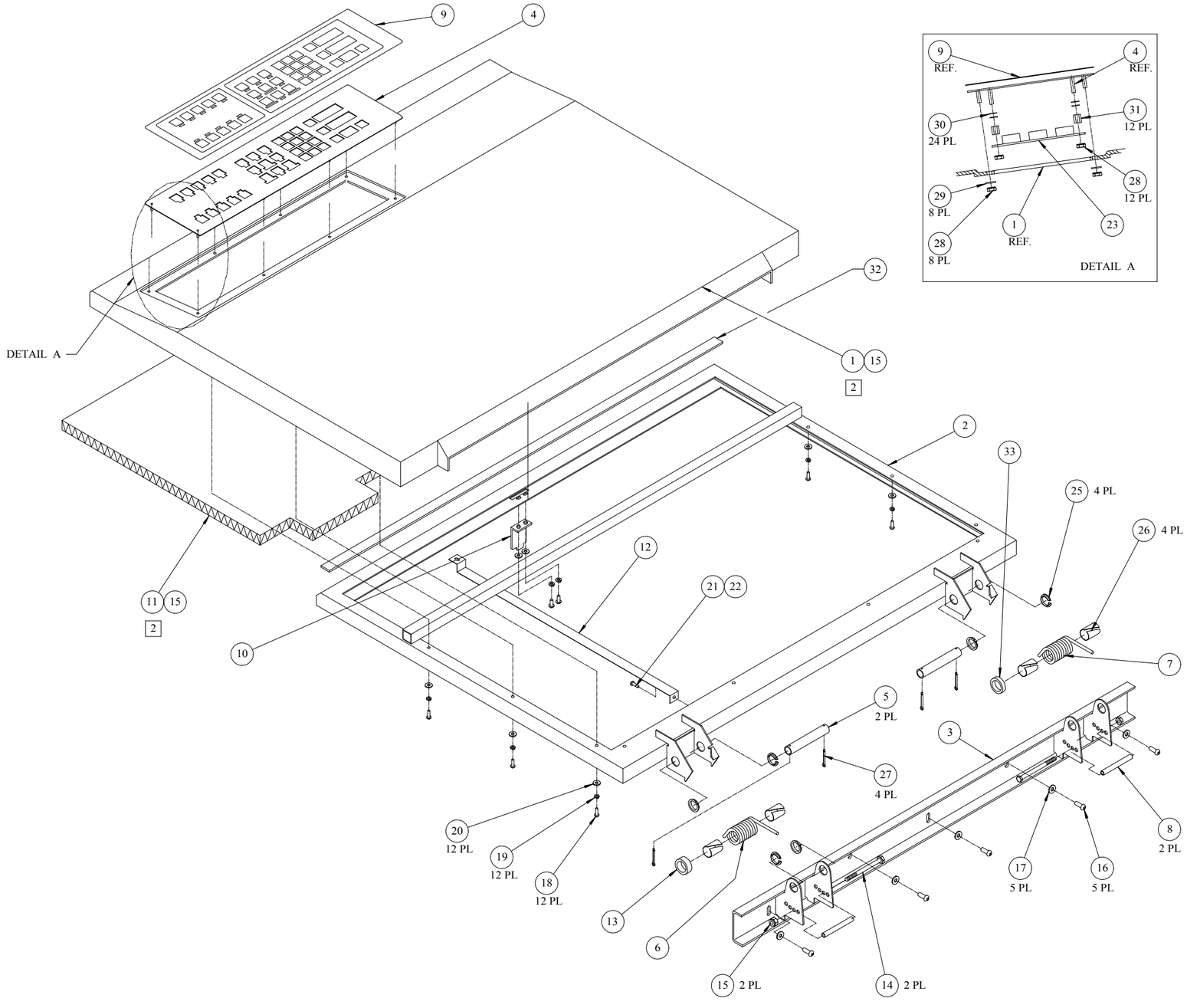
Lower Section Assembly





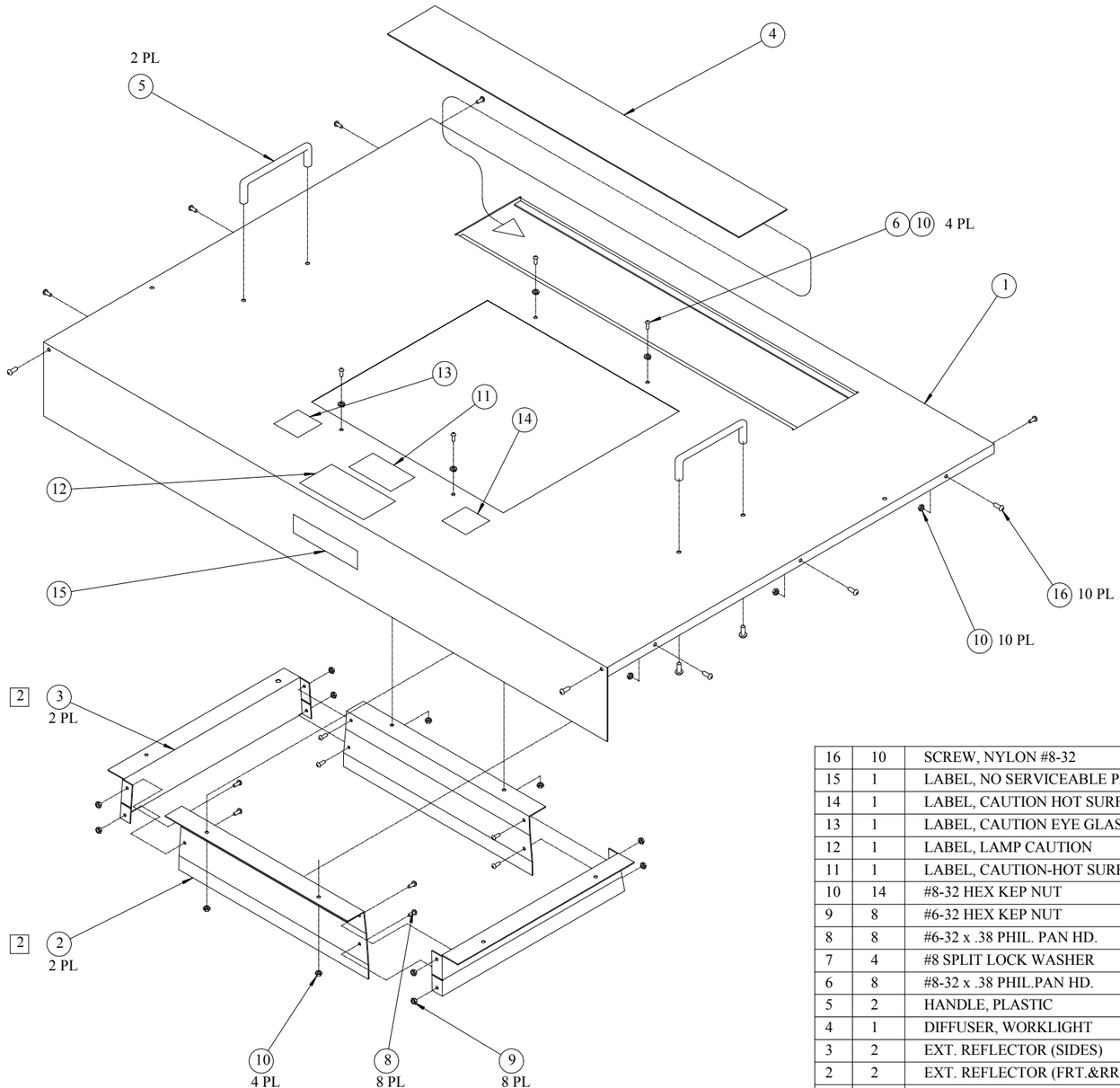
41	4	#6-32x.38 PHIL PAN HD.	41 06PPS.37
40	4	#8-32 KEP NUT	41 08NPK
39	2	#4-40x3/4 PHIL FLAT HD.	41 04PPS.75
38	1	SPRING PLATE, SWITCH	11D2011A99
37	1	SWITCH, TIMING - 2.5 LEVER	55SW17
36	1	BRACKET, SWITCH MOUNT	11D3521A62
35	1	GUARD BLOWER FAN	13FGD02
34	1	FLANGEPLATE	11D1648A02
33	1	PHOTOCELL	SEE BOM
32	1	MOUNT PHOTOCELL	11D1183
31	4	#6 SPLIT LOCK WASHER	41 06WLS
30	2	#6 FLAT WASHER	41 06WFR
29	2	KNOB, LITE STD.	45KOB06
28	8	1/4 SPLIT LOCK WASHER	41 40WLS
27	6	1/4 NYLON NUT	441B40NLN
26	4	#6-32 KEP NUT	41 06NKP
25	4	#6 SHEET METAL SCREW	41B06PSM.37
24	2	#10-32x.38 PHIL FLAT HD 100°	41 12PF0.37
23	14	1/4 FLAT WASHER	41 40WFR
22	2	1/4-20x.62 SOCKET CAP SCREW	41B40SHC.62
21	4	#8 SPLIT LOCK WASHER	41 08WLS
20	4	#8-32x.37 PHIL FLAT HD.	41 08PPS.37
19	11	#10-32x.37 PHIL PAN HD	41 12PPS.37
18	11	#10 SPLIT LOCK WASHER	41 10WLS
17	3	#10 FLAT WASHER	41 10WFR
16	10	#6-32x.38 PHIL FLAT HD. 100°	41B06PF0.37
15	1	PCB SET, OV34	64PCB-OV34
14	127"	TAPE, GLASS CUSHION 1/8 x 1	81TAP07
13	127"	TAPE, GLASS CUSHION 1/8 x 1/4	81TAP06
12	1	COVER, REAR UPPER	11D3579A02
11	1	COVER, PCB	11D3413A17
10	1	GLASS HOLDER, FRONT	11D3291A02
9	1	ASSEMBLY, SPRING/SWITCH	62D2059A00
8	1	GLASS, PANE	18D3292A00
7	1	COVER, VACUUM LINE	11D3520A00
6	1	ASSEMBLY, BASE	68D3616A00
5	1	TRIM, GLASS - REAR	11D3288A02
4	1	REAR PANEL	11D3279A20
3	1	SIDE PANEL, RIGHT	11D3283B20
2	1	SIDE PANEL, LEFT	11D3283A20
1	1	GLASS FRAME	11D3287A02
ITEM	QTY	DESCRIPTION - D3615	PART NO.

Lid Assembly



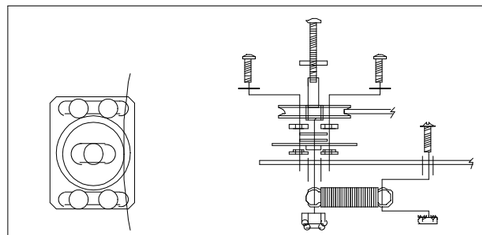
ITM	QTY	DESCRIPTION D3590	PART NO.
		P A R T S L I S T	
33	1	SPACER, NARROW (SPRING)	12D4564A62
32	3 ft.	TAPE, DOUBLE SIDED 3/4"	81TAP03
31	12	#6-32x.312 STANDOFF, HEX	42HHS9292
30	24	#6 WASHER, STAR INTERNAL	41-06WLI
29	8	#6 WASHER, FLAT	41-06WFR
28	20	#6-32 NUT, HEX KEP	41-06NKP
27	4	COTTER PIN ø.093	41-03PCT1.0
26	4	BEARING, SLEEVE	43BLB07
25	4	BEARING, SNAP IN	43BLB08
24	1	ADHESIVE, SPRAY	82ADH15
23	1	PCB SET (DISPLAY, MEMORY)	64PCB-OV29
22	1	#8 WASHER, EXTERNAL LOCK	41-08WLX
21	1	#8-32x.38 PHIL PAN HD.	41B08PPS.38
20	12	#10 WASHER, FLAT SAE	41B10WFR
19	12	#10 WASHER, SPLIT LOCK	41-10WLS
18	12	#10-32x.50 PHIL PAN HD.	41B12PPS.50
17	5	#1/4 WASHER, FLAT SAE	41-40WFR
16	5	#1/4-20x.62 SOCKET HD	41BF0SHC.62
15	2	#1/4-20 NUT, HEX LOCK	41B40NLN
14	2	#1/4-20x3.0 HEX HD. BOLT	41-F0BHX3.0
13	1	SPACER, SPRING	12D2962A62
12	1	GROUND STRAP, NARROW	11D2351A00
11	1	HONEYCOMB, LARGE	13D3422A00
10	1	PLUNGER, SWITCH	11D1938A62
9	1	OVERLAY	SEE BOM
8	2	SPACER, TUBING	12D3572A07
7	1	SPRING, TORSION (HEAVY)	12D3527A00
6	1	SPRING, TORSION (SOFT)	12D2961A00
5	2	PIN, HINGE	12D1675A99
4	1	BEZEL, INTEGRATOR	11D3419A20
3	1	BRACKET, HINGE	11D3281A02
2	1	FRAME, LID	11D3420A02
1	1	SHELL, LID	13D3293A00

False Floor Assembly

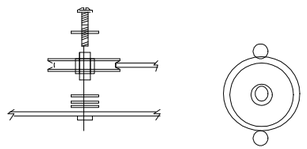


ITEM	QTY	DESCRIPTION D3584	PART NO.
16	10	SCREW, NYLON #8-32	41N08SPS.25
15	1	LABEL, NO SERVICEABLE PARTS	15D3522A00
14	1	LABEL, CAUTION HOT SURFACE	15D2527A00
13	1	LABEL, CAUTION EYE GLASSES	15D2516A00
12	1	LABEL, LAMP CAUTION	15D2323
11	1	LABEL, CAUTION-HOT SURFACE	15D1857A00
10	14	#8-32 HEX KEP NUT	41 08NKP
9	8	#6-32 HEX KEP NUT	41 06NKP
8	8	#6-32 x .38 PHIL. PAN HD.	41 06PPS.37
7	4	#8 SPLIT LOCK WASHER	41 08WLS
6	8	#8-32 x .38 PHIL.PAN HD.	41 08PPS.37
5	2	HANDLE, PLASTIC	44HDL01
4	1	DIFFUSER, WORKLIGHT	18D2867A00
3	2	EXT. REFLECTOR (SIDES)	11D2827A07
2	2	EXT. REFLECTOR (FRT.&RR.)	11D2826A07
1	1	FALSE FLOOR	11D2843A00

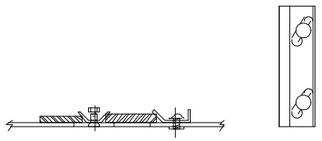
MMotorized Quad Filter Assembly



IDLER PULLEY ASSEMBLY



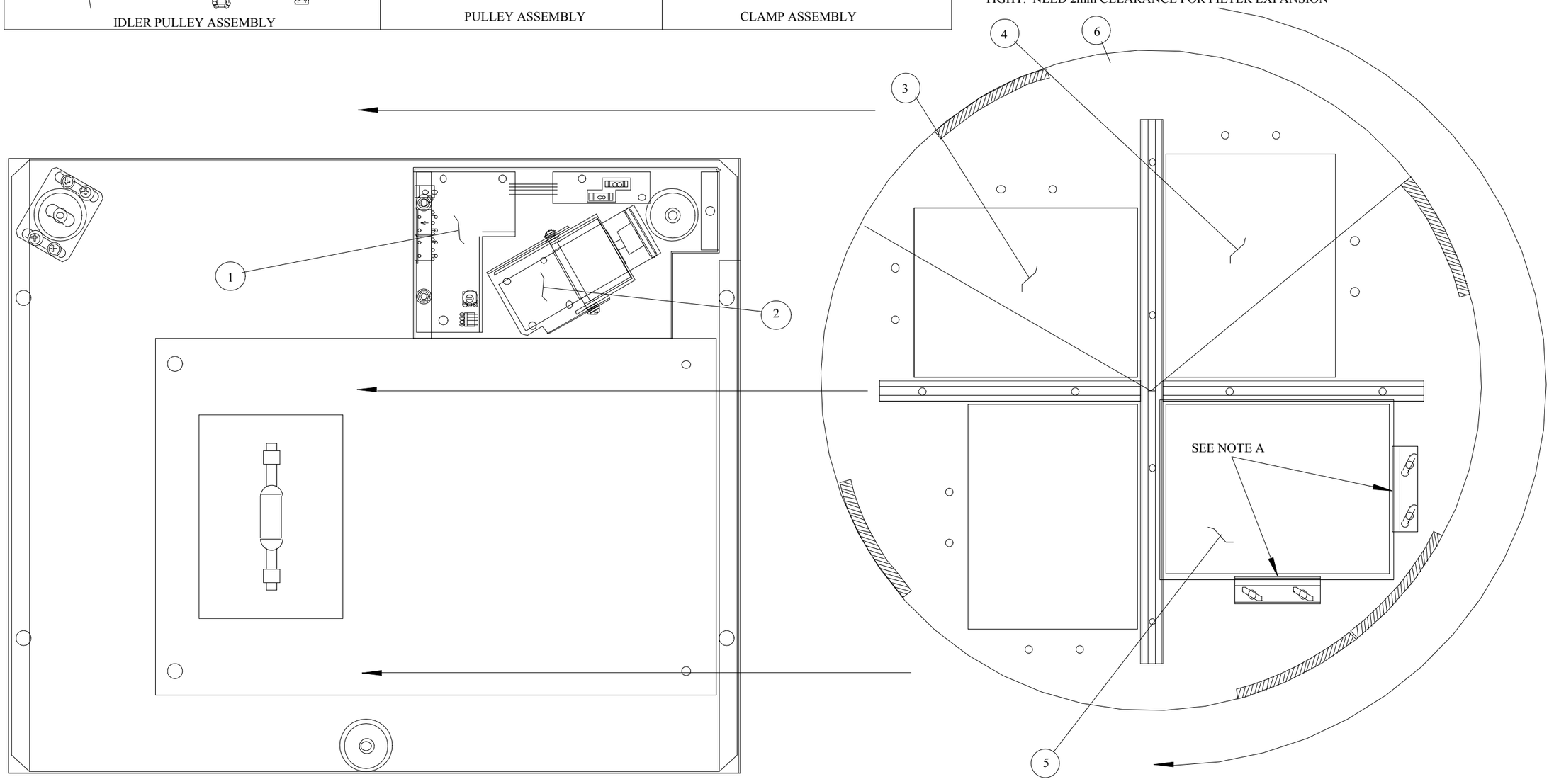
PULLEY ASSEMBLY



CLAMP ASSEMBLY

ITEM	QTY	DESCRIPTION	PART NO.
1	1	PCB ROTARY QUAD FLTR	64MQ446-T
2	1	MOTOR, 24VDC ROTARY FLTR.	31MOT09
3	1	FILTER, KOKOMO	63D2554A00
4	1	FILTER, NEUTRAL DENSITY	18D1212A00
5	1	FILTER, CLEARING	18D1211A00
6	1	ASSY, DISK- ROTARY FLTR. W/FILTERS.	63D1218A00

NOTE A : INSURE FOR PROPER INSTALLATION, FILTER GLASS SHOULD NOT BE TIGHT. NEED 2mm CLEARANCE FOR FILTER EXPANSION

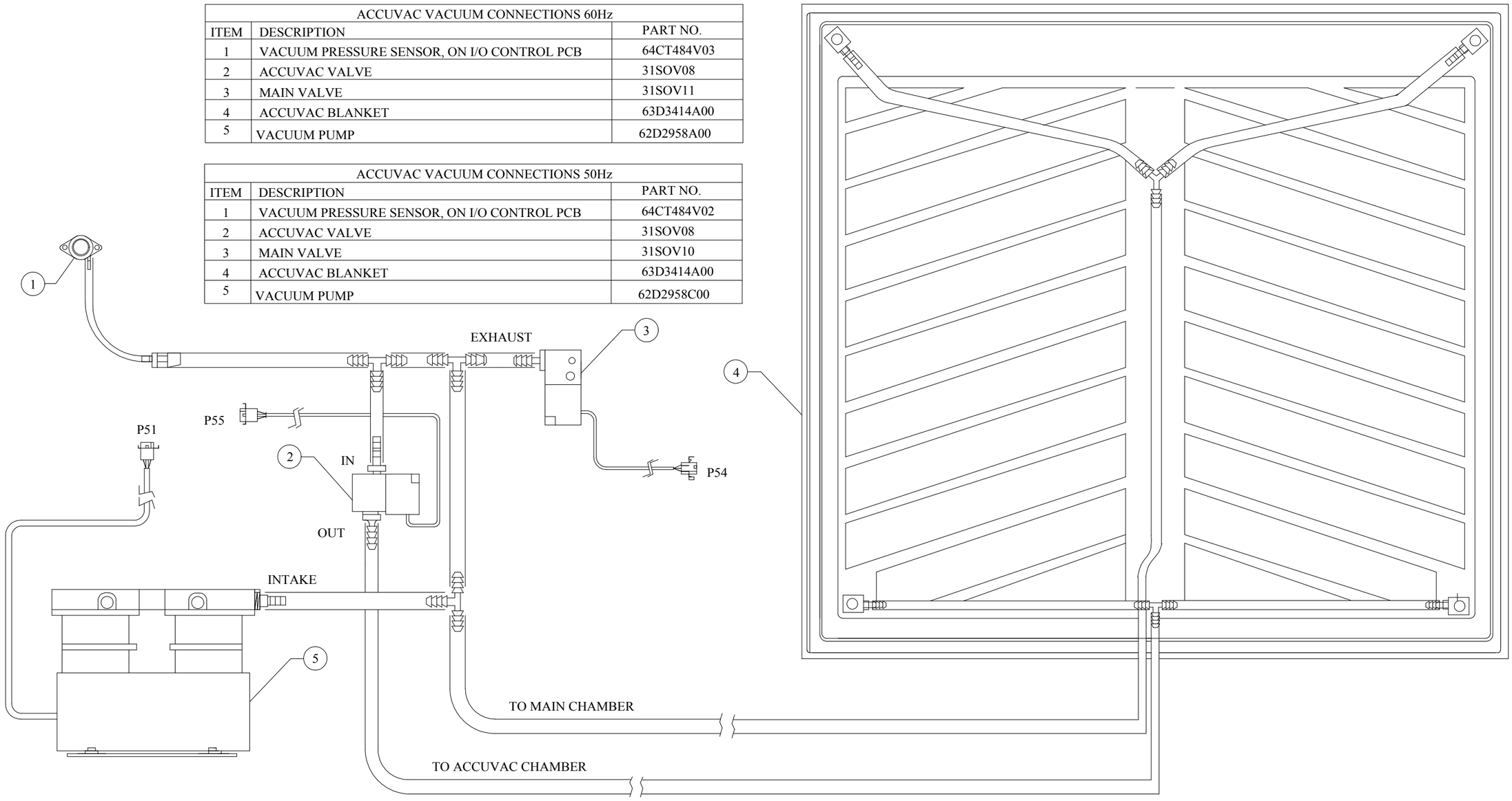


Connection Diagrams

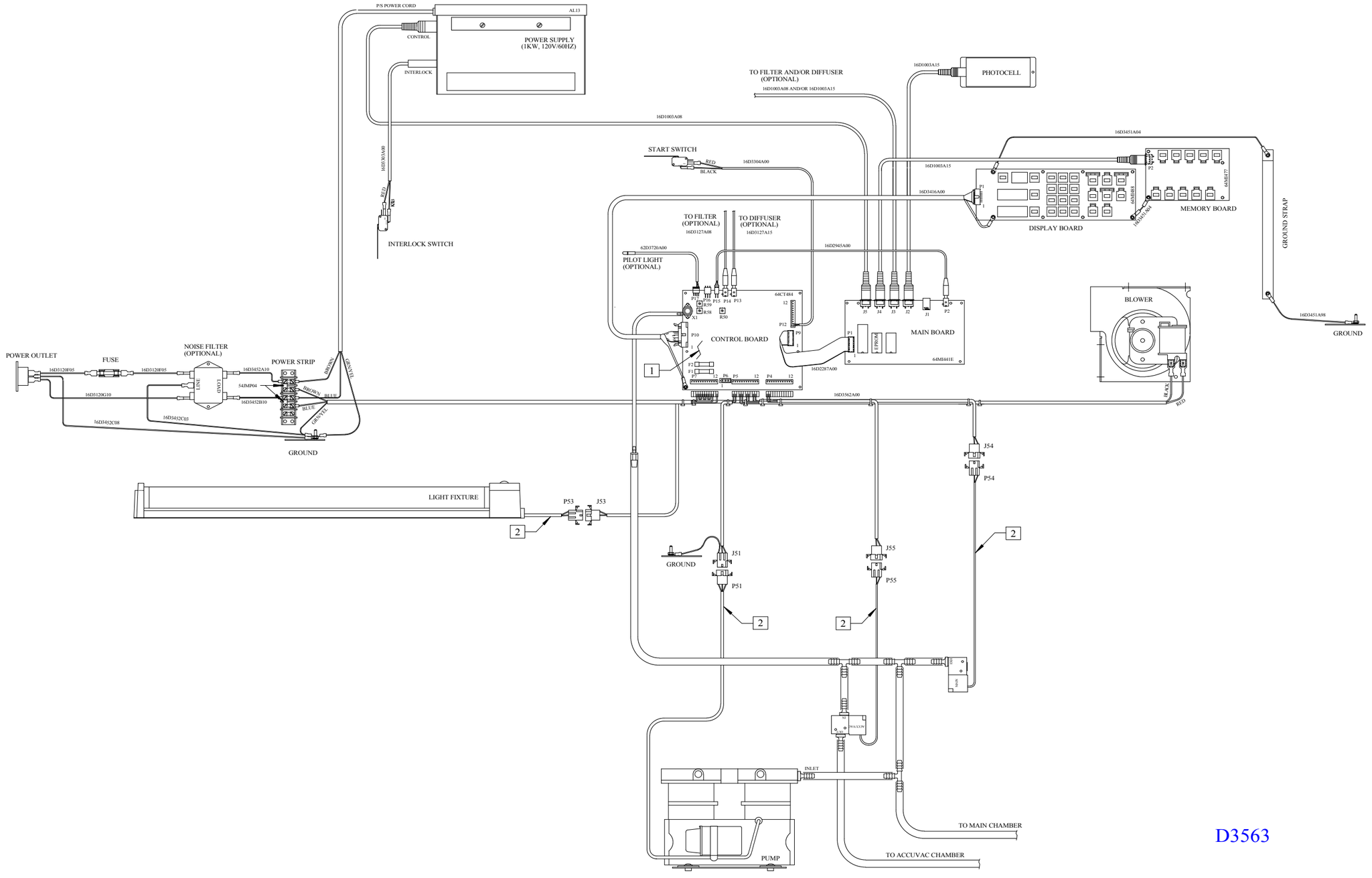
Accuvac Vacuum Connections

ACCUVAC VACUUM CONNECTIONS 60Hz		
ITEM	DESCRIPTION	PART NO.
1	VACUUM PRESSURE SENSOR, ON I/O CONTROL PCB	64CT484V03
2	ACCUVAC VALVE	31SOV08
3	MAIN VALVE	31SOV11
4	ACCUVAC BLANKET	63D3414A00
5	VACUUM PUMP	62D2958A00

ACCUVAC VACUUM CONNECTIONS 50Hz		
ITEM	DESCRIPTION	PART NO.
1	VACUUM PRESSURE SENSOR, ON I/O CONTROL PCB	64CT484V02
2	ACCUVAC VALVE	31SOV08
3	MAIN VALVE	31SOV10
4	ACCUVAC BLANKET	63D3414A00
5	VACUUM PUMP	62D2958C00

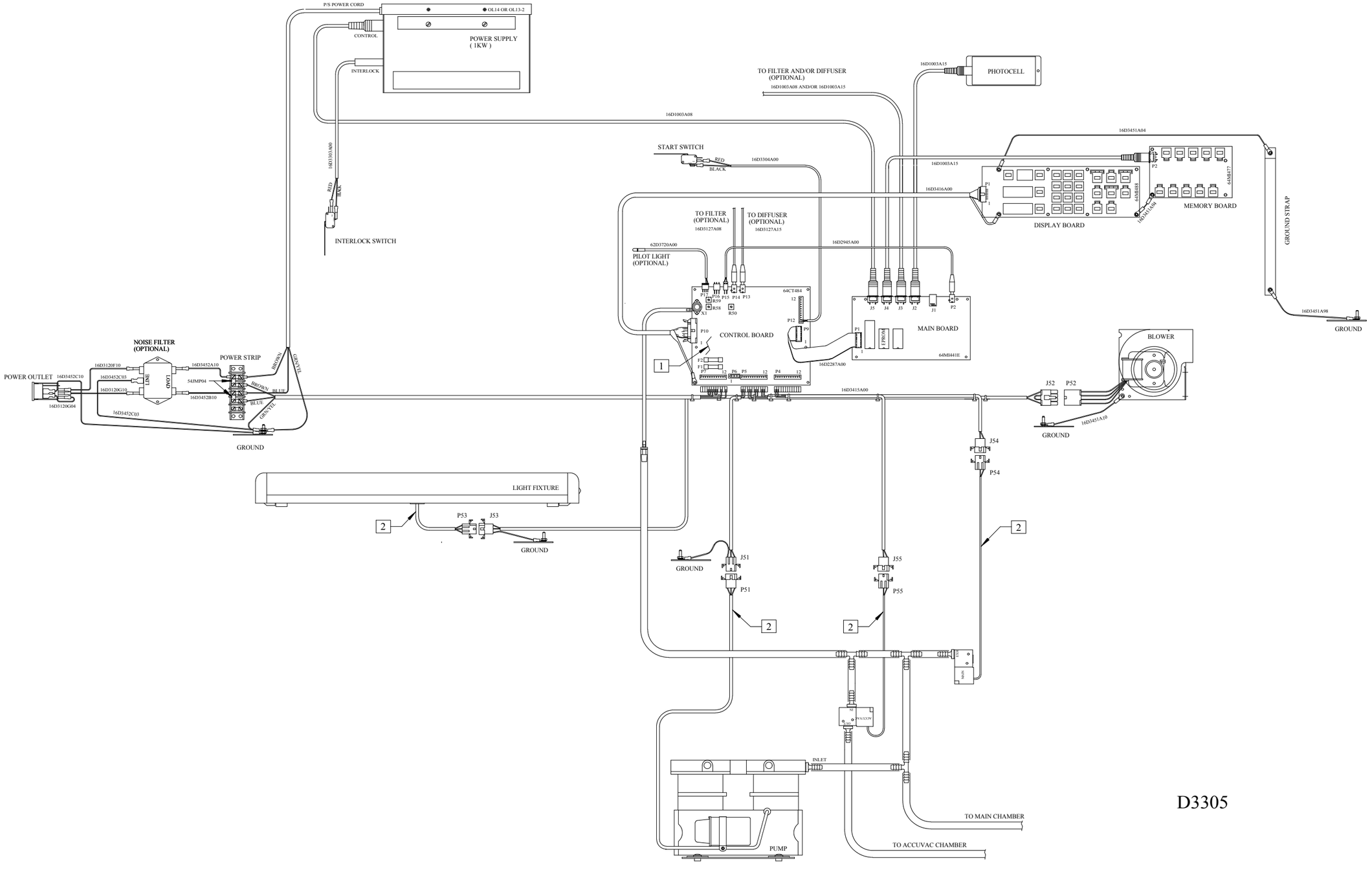


Cable Connections - 120V



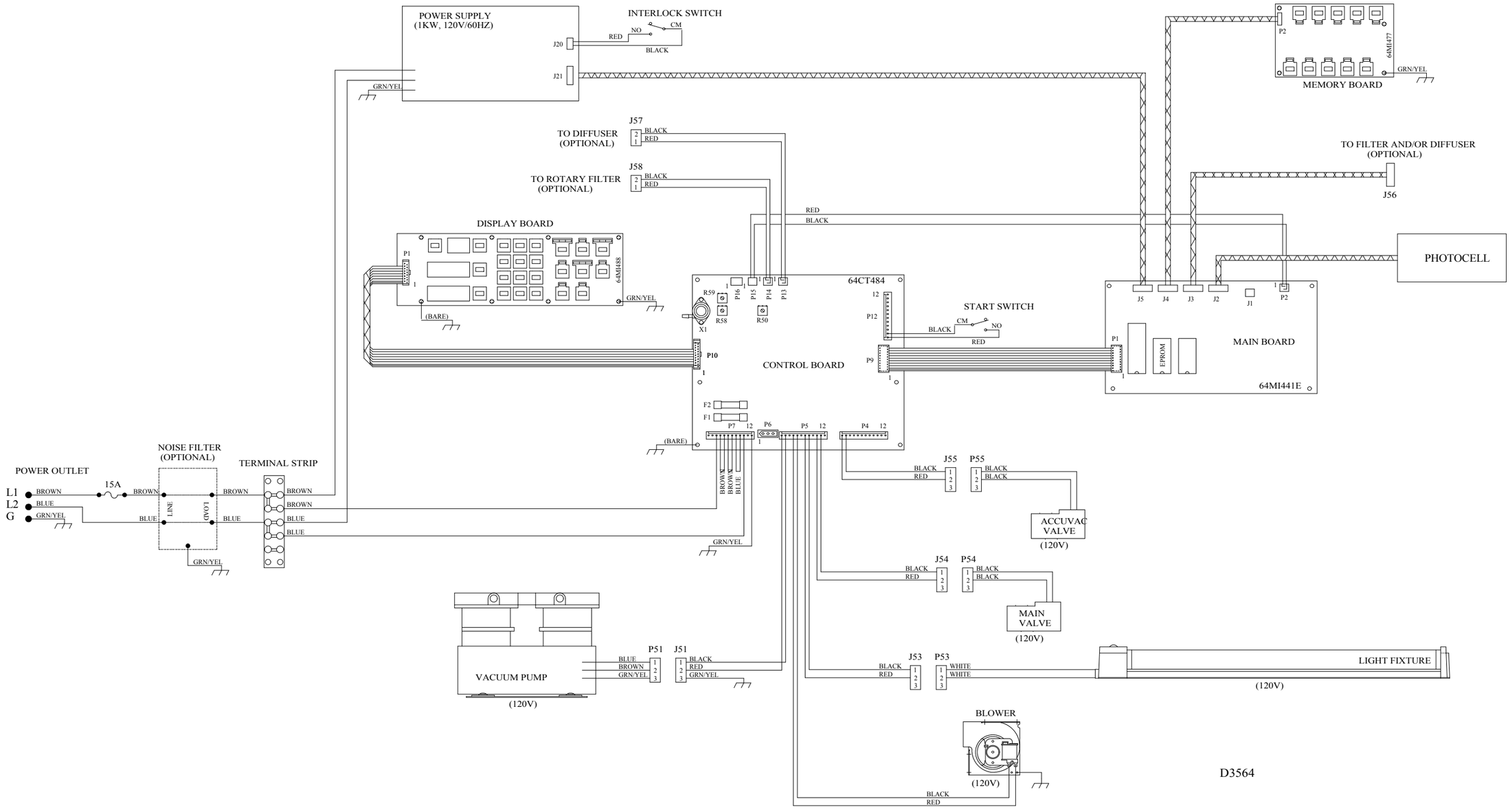
D3563

Cable Connections - 220V

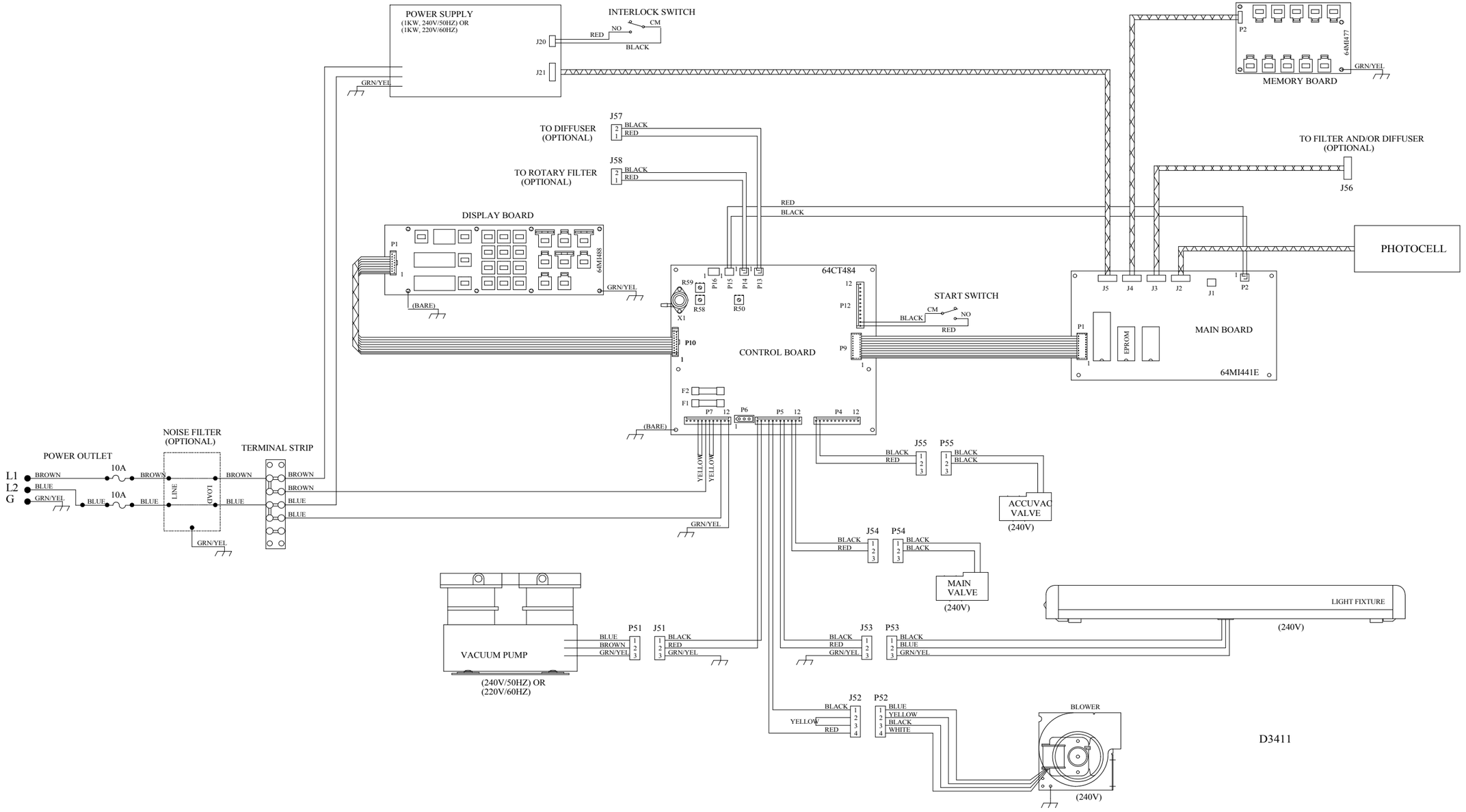


D3305

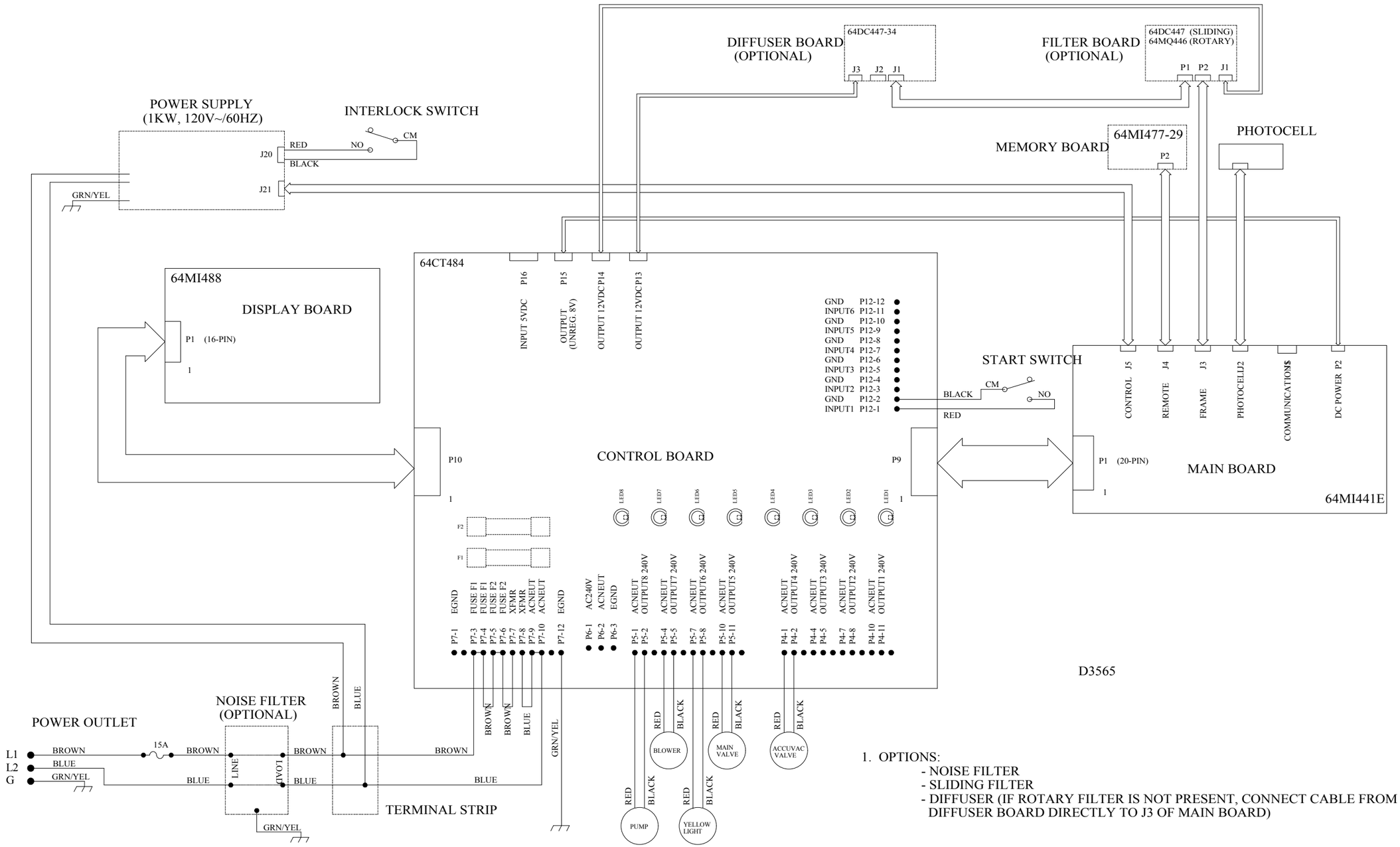
Wiring Connections - 120V



Wiring Connections - 220V

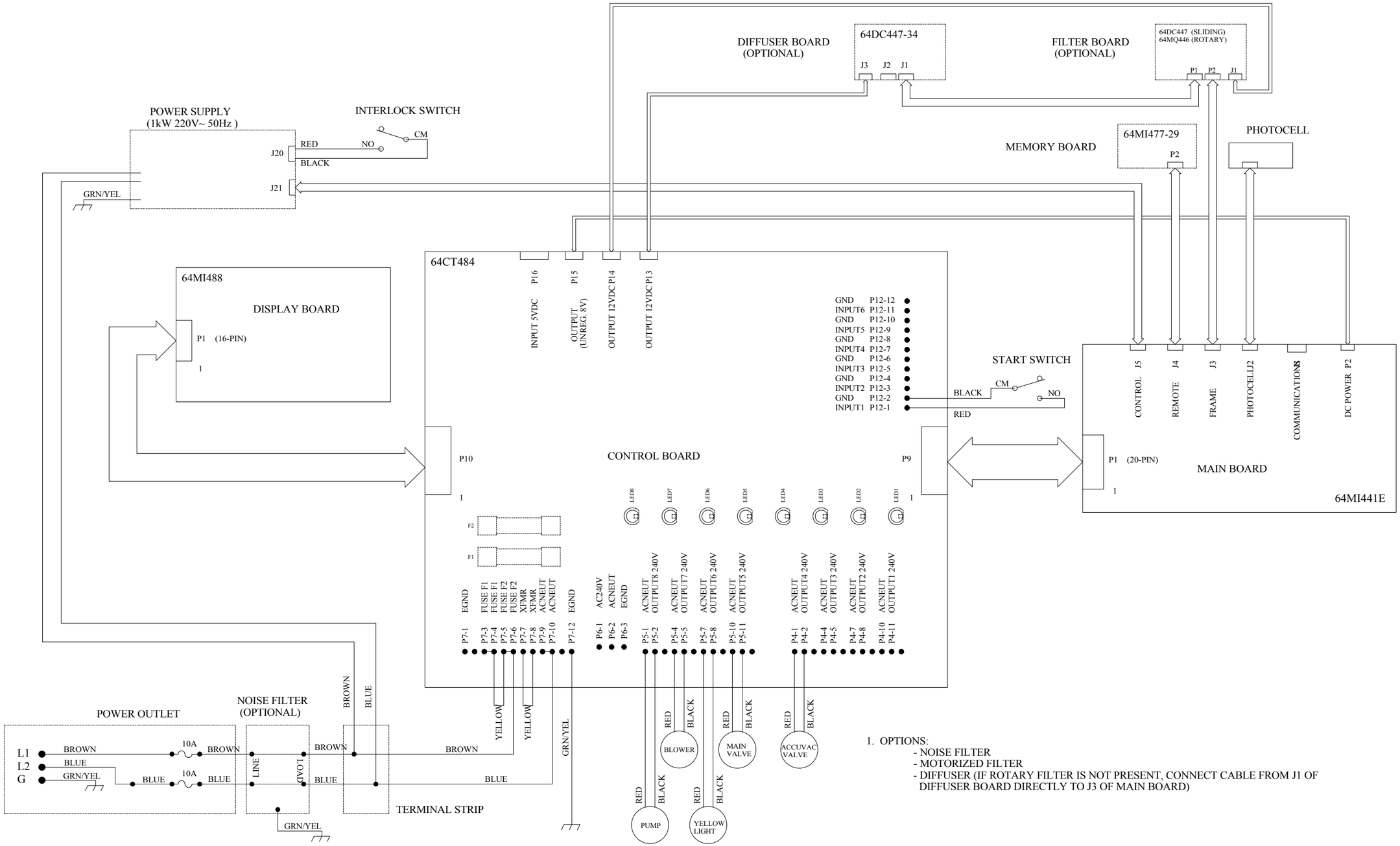


Wiring Diagram - 120V



1. OPTIONS:
   - NOISE FILTER
   - SLIDING FILTER
   - DIFFUSER (IF ROTARY FILTER IS NOT PRESENT, CONNECT CABLE FROM J1 OF DIFFUSER BOARD DIRECTLY TO J3 OF MAIN BOARD)

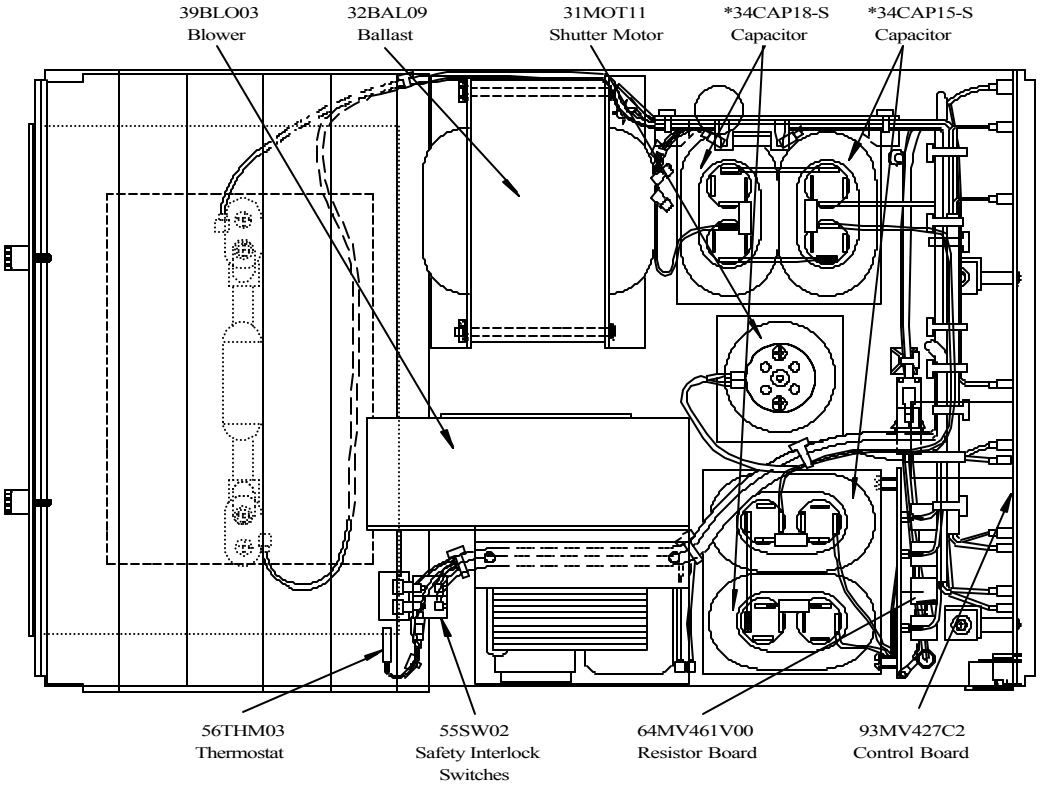
Wiring Diagram - 220V

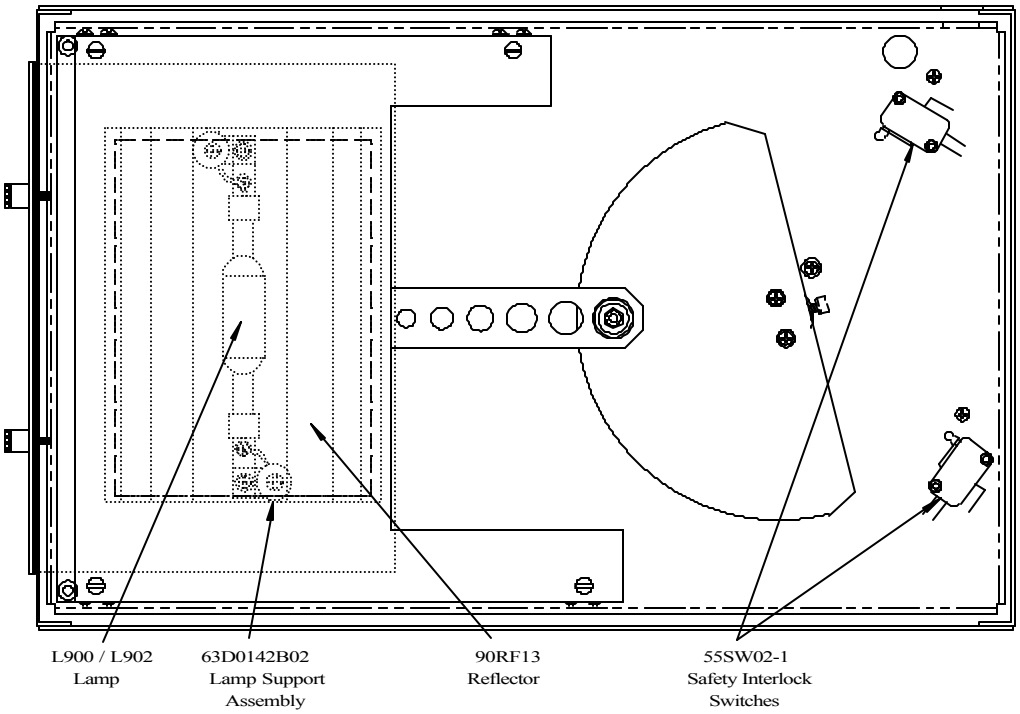


1. OPTIONS:
   - NOISE FILTER
   - MOTORIZED FILTER
   - DIFFUSER (IF ROTARY FILTER IS NOT PRESENT, CONNECT CABLE FROM J1 OF DIFFUSER BOARD DIRECTLY TO J3 OF MAIN BOARD)

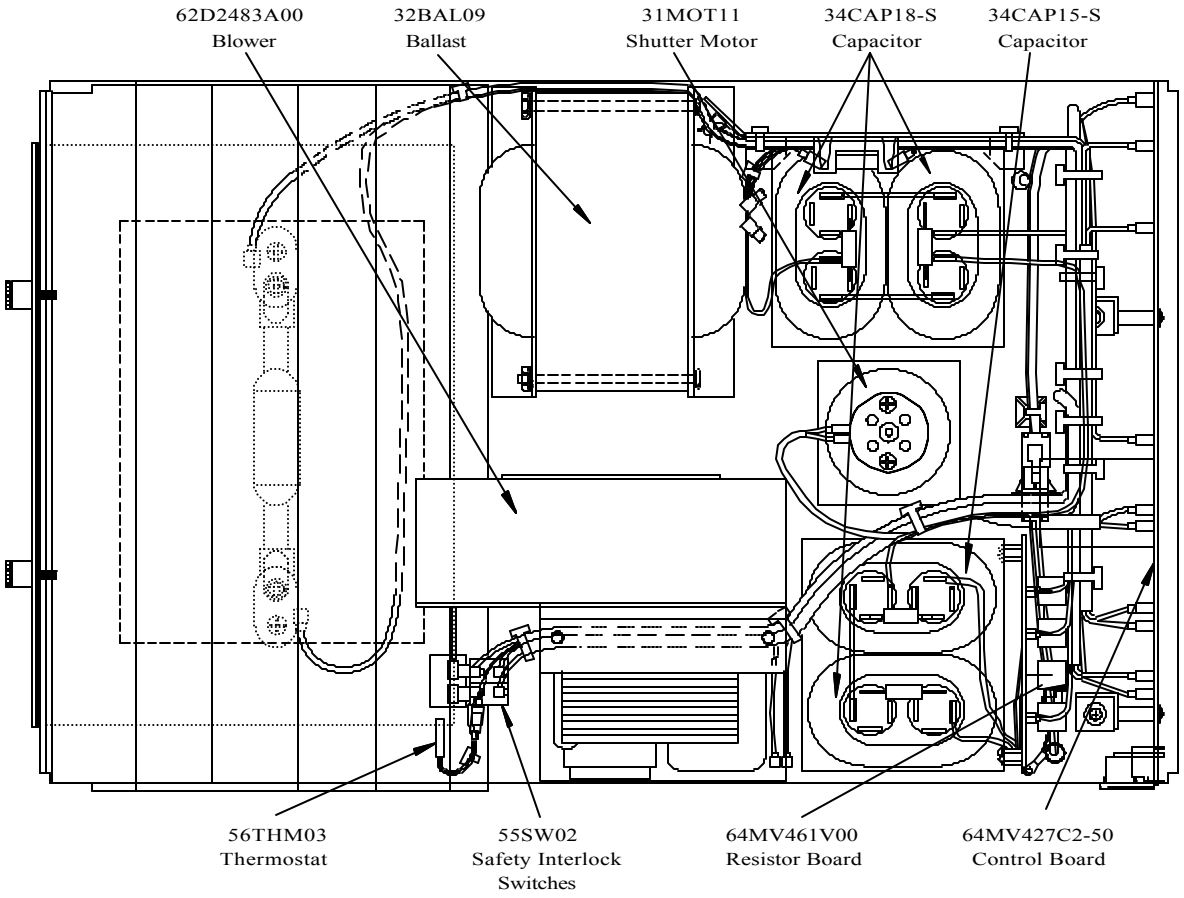
AL 13 - 60 Hz Component Layout

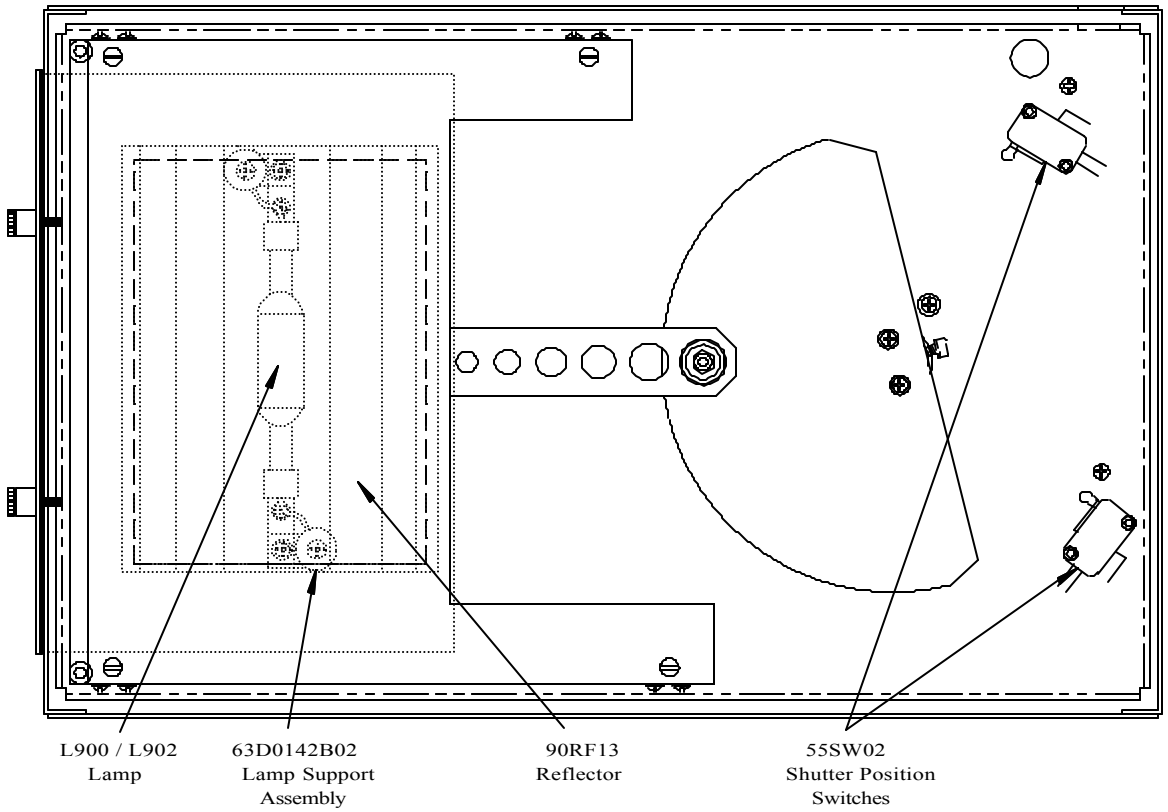
*Capacitors for 220~ units are different values see AL 13 (220~) Wiring Diagram for values.



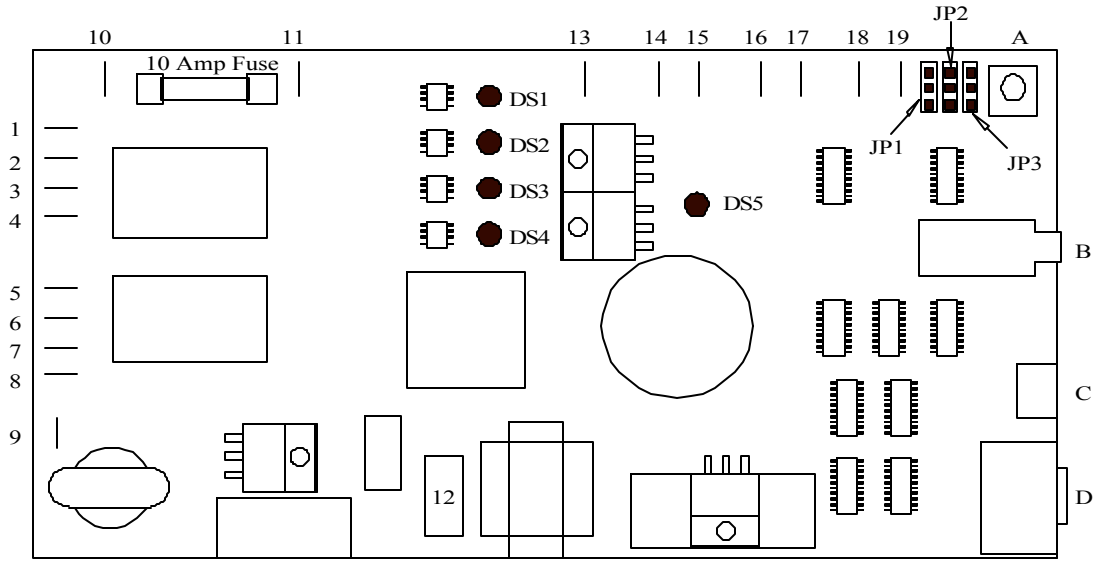


AL 14 - 50 Hz Component Layout





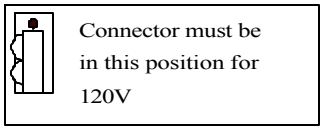
AL 13 Control Board (64MV427C2)



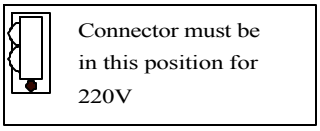
1) AC COM
2) Ballast COM
3) Lamp COM
4) Blower COM
5) Blower HOT
6) Medium Cap Input
7) High Cap Input
8) Low Cap Input
9) Lamp Lead HOT
10) Ballast AC HOT
11) Incoming AC HOT
12) **Voltage Selection Jumpers** see NOTE A
13) Ground
14) Shutter Motor +
15) Shutter Motor -
16) Shutter Switch 2 +
17) Shutter Switch 2 -
18) Shutter Switch 1 +
19) Shutter Switch 1 -

DS1) POWER
DS2) BLOWER
DS3) MED POWER
DS4) HIGH POWER
DS5) SHUTTER MOTOR
A) Idle Adjustment
B) External Interlock
C) **External Operation Switches** see NOTE B
D) Control Din (to integrator)

NOTE A: TERMINAL 12 Voltage Selection Switch



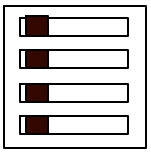
Connector must be in this position for 120V

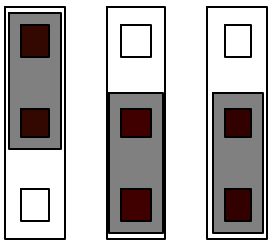


Connector must be in this position for 220V

NOTE B Test Switches OFF ON

1 Power ON/OFF
2 High Expose
3 Medium Expose
4 Low Expose

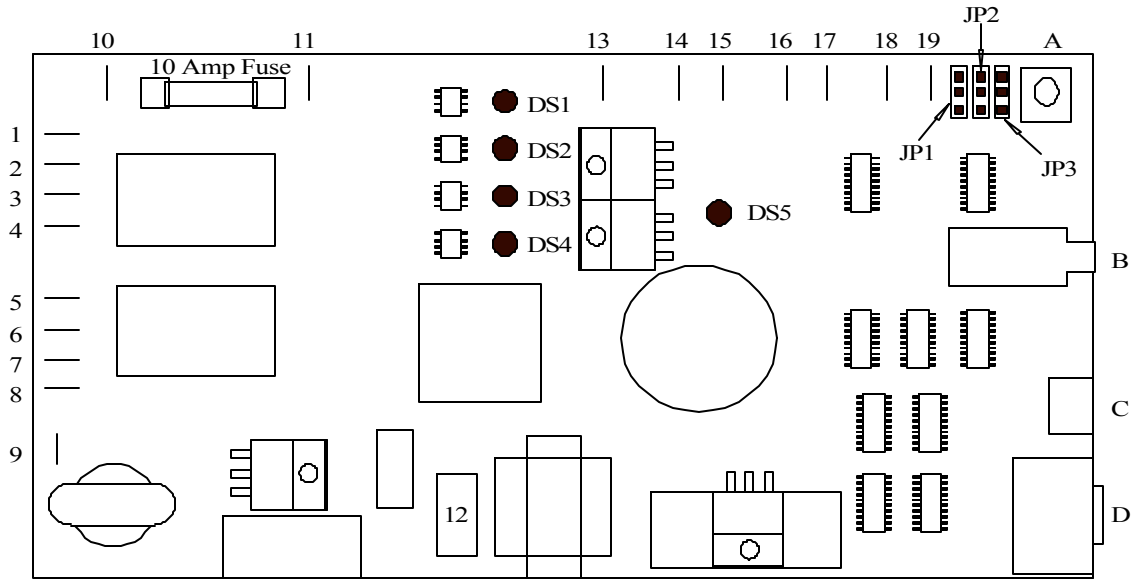




JUMPER SETTING

JP1	UP	Duel Shutter Switch Operation
	DOWN	Single Shutter Switch Operation
JP2	UP	Not Using External Interlock
	DOWN	Using External Interlock
JP3	UP	50Hz Operation
	DOWN	60Hz Operation

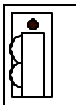
AL 14 Control Board (64MV427C2-50)



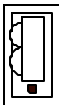
1) AC COM
2) Ballast COM
3) Lamp COM
4) Blower COM
5) Blower HOT
6) Medium Cap Input
7) High Cap Input
8) Low Cap Input
9) Lamp Lead HOT
10) Ballast AC HOT
11) Incoming AC HOT
12) **Voltage Selection Jumpers** see NOTE A
13) Ground
14) Shutter Motor +
15) Shutter Motor -
16) Shutter Switch 2 +
17) Shutter Switch 2 -
18) Shutter Switch 1 +
19) Shutter Switch 1 -

DS1) POWER
DS2) BLOWER
DS3) MED POWER
DS4) HIGH POWER
DS5) SHUTTER MOTOR
A) Idle Adjustment
B) External Interlock
C) **External Operation Switches** see NOTE B
D) Control Din (to integrator)

NOTE A: TERMINAL 12 Voltage Selection Switch



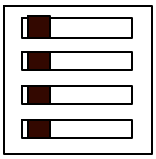
Connector must be in this position for 120V

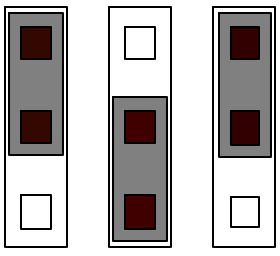


Connector must be in this position for 220V

NOTE B Test Switches OFF ON

1 Power ON/OFF
2 High Expose
3 Medium Expose
4 Low Expose



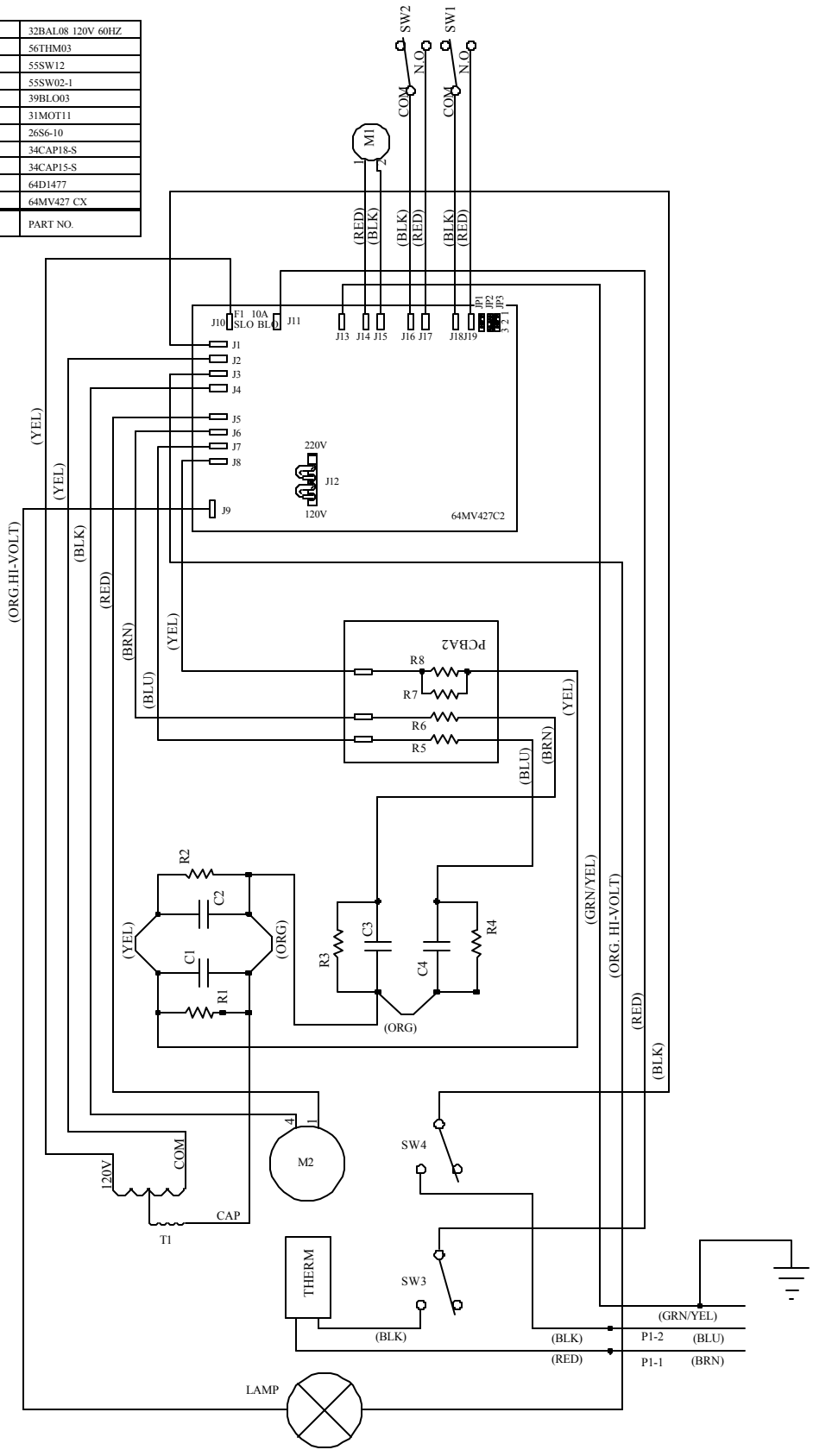


JUMPER SETTING

JP1	UP	Duel Shutter Switch Operation
	DOWN	Single Shutter Switch Operation
JP2	UP	Not Using External Interlock
	DOWN	Using External Interlock
JP3	UP	50Hz Operation
	DOWN	60Hz Operation

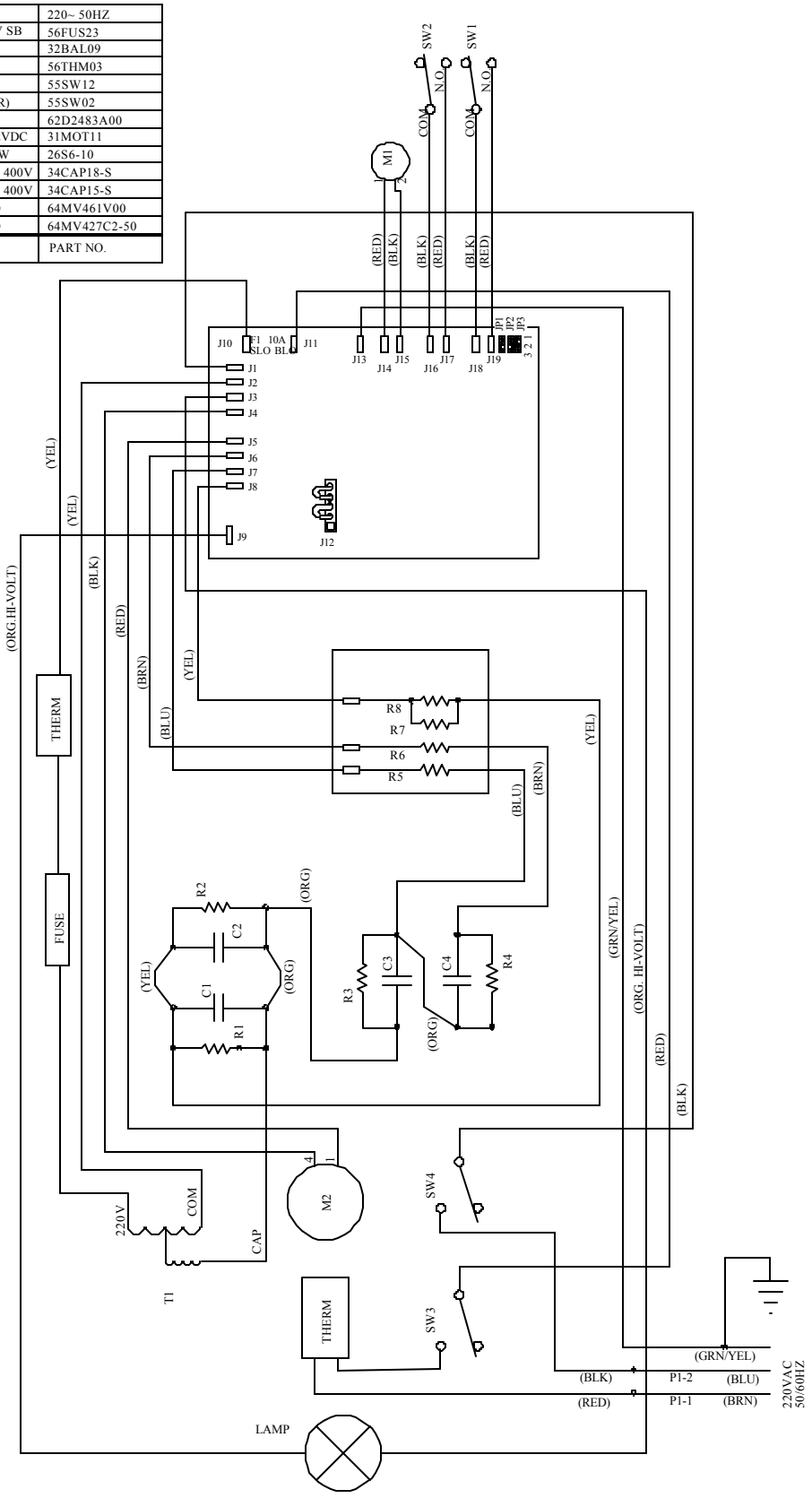
AL 13 (120V~60Hz) Wiring Diagram

REF. DESIGNATIONS	DESCRIPTION	PART NO.
T1	BALLAST	32BAL08 120V 60HZ
THERM	THERMOSTAT	56THM03
SW3-SW4	SWITCH,(SAFETY)	55SW12
SW1-SW2	SWITCH,(SHUTTER)	55SW02-1
M2	MOTOR, BLOWER	39BLO03
M1	MOTOR, DRIVE 12VDC	31MOT11
R1-R4	RESISTOR 1M Ohm 1W	26S6-10
C2,C4	CAPACITOR 20µƒ 400V	34CAP18-S
C1,C3	CAPACITOR 15µƒ 400V	34CAP15-S
PCBA2	RESISTOR BOARD	64D1477
PCBA1	CONTROL BOARD	64MV427 CX



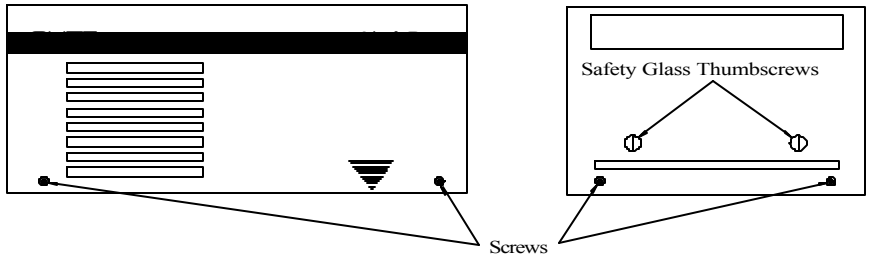
AL 14 (220V~50Hz) Wiring Diagram

		220~ 50HZ
FUSE	FUSE, 5 AMP 250V SB	56FUS23
T1	BALLAST	32BAL09
THERM	THERMOSTAT	56THM03
SW3-SW4	SWITCH,(SAFETY)	55SW12
SW1-SW2	SWITCH,(SHUTTER)	55SW02
M2	MOTOR, BLOWER	62D2483A00
M1	MOTOR, DRIVE 12VDC	31MOT11
R1-R4	RESISTOR 1Meg 1W	26S6-10
C2, C3, C4	CAPACITOR 20µF 400V	34CAP18-S
C1	CAPACITOR 15µF 400V	34CAP15-S
PCBA2	RESISTOR BOARD	64MV461V00
PCBA1	CONTROL BOARD	64MV427C2-50
REF. DESIGNATIONS	DESCRIPTION	PART NO.



AL 13/14 Cover Removal

- Place the light on its top and remove the hood and filter assembly.
- Place the light on a table with the shutter flat against the table and remove the safety glass. Then remove the two screws from each of the four sides and remove the cover.



Path of Power to the P.C.Board

The power circuit can be easily traced from where the power cord enters the corner of the unit and immediately connects with 2 (two) wire nuts to black (V~ hot) and white (V~ common). The circuit travels through the black wire to the thermostat, then through the safety glass switch and returns as a brown wire to the P.C. Board as incoming V~ (HOT). The V~ common circuit travels through the white wire to the other safety glass switch and returns as a yellow wire to the P.C. Board as incoming V~ common.

Interlock Systems

The internal interlock system serves two purposes. The first is for operator safety by protecting the safety glass. This glass filters short UV radiation and covers the high voltage lamp terminals. This interlock also protects from overheating, by traveling through the thermostat by the reflector. There is also an outlet on the side marked “INTERLOCK”. This external interlock inhibits exposures when installed. It is not, however, related to the internal interlock.

The internal interlock is a loop that travels through the light, passing through two safety glass switches and a thermostat. This interlock is in series with the input power to the P.C. Board. When this interlock is open all power is cut to the P.C. Board.

The first place to check for an opening in the circuit is the glass switches (see Component Layout Diagram for location). If both switches check good, then check the thermostat. This is a closed loop and can be traced with an Ohmmeter with the AL13/14 unplugged.

Lamp Voltage

The lamp voltage measurement can provide useful information for lamp

striking, lamp output and switching information. The meter used to measure can cause different results. The waveforms are not sinusoidal, so different meters may produce different results.

Here is a chart with typical measurements, (see P.C. Board Layout Diagrams for the location of the test points).

See Shrouding The Lamp before continuing.

Lamp voltage measured from lamp lead common to:

	Low	Med.	High	Trigger
Low (Yellow)	130	140	150	270
Medium (Brown)	270	140	150	270
High (Blue)	270	270	150	270

Path Of Power To The Lamp

The basic path is incoming line, safety interlock, P.C. Board, ballasts, capacitors, back to the P.C. Board, then to the lamp.

In detail first see Path of Power to the P.C. Board.

Then see P.C. Board Layout, showing ballast power (yellow 120V) and ballast common (yellow COM).

This is the feed to the ballast and should be 120 V~. The ballast then feeds the capacitors with the wire labeled "CAP" (see Capacitors and Level Switching for detailed wiring).

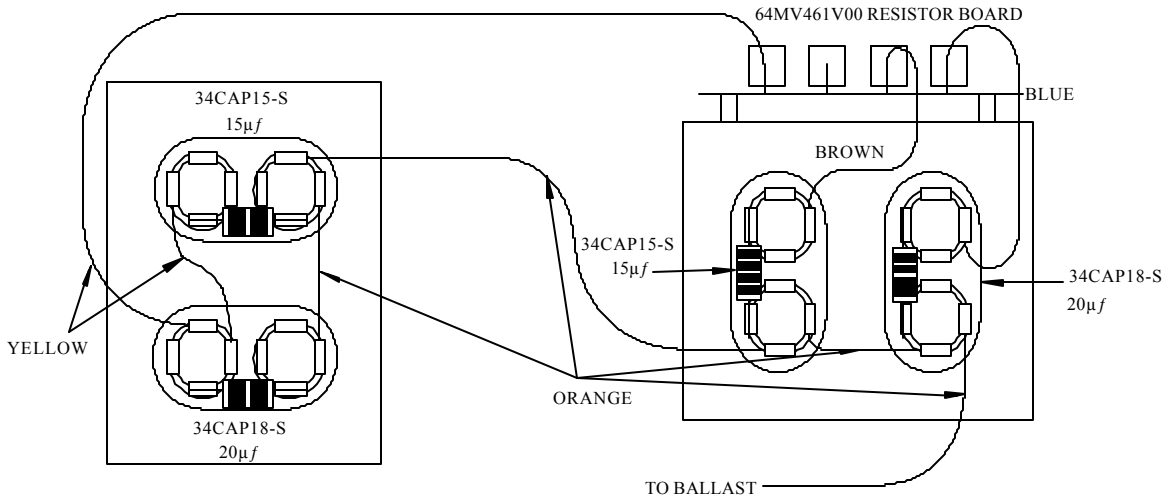
From the capacitors the power feeds back to the P.C. Board on the yellow, brown, and blue wires. The P.C. Board does the electronic switching of the capacitors and sends the power to the lamp.

Capacitors and Level Switching

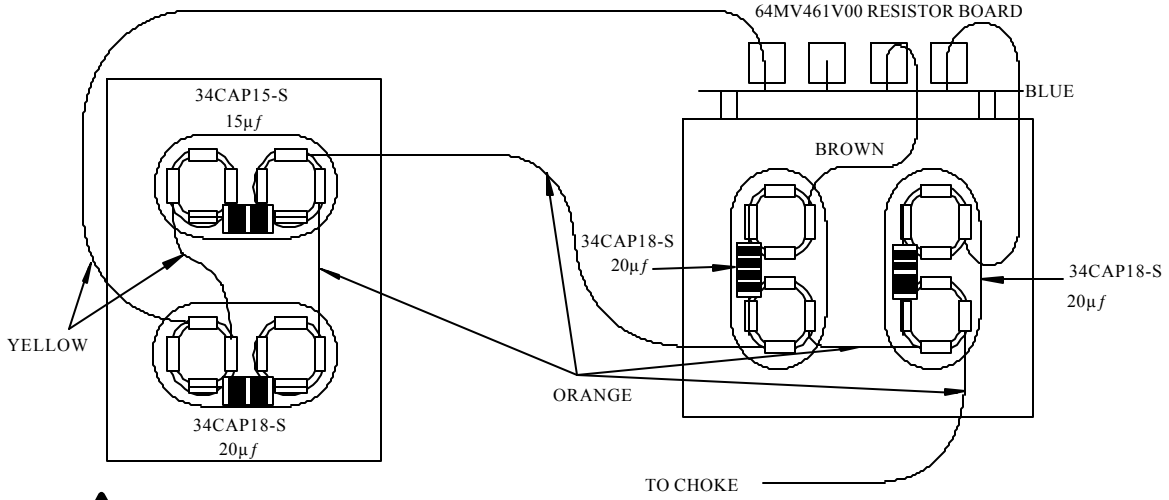
The capacitors pass all the current that flows through the lamp. They are also used to switch power levels. The capacitors are divided into three sections. The unit has two low power (idle) capacitors connected with a yellow wire. There is one medium power capacitor connected with a brown wire. There is one high power capacitor connected with a blue wire. All capacitors have an orange feed wire coming from the ballast.

The low power (idle) capacitors are always in the circuit. The medium power capacitor gets pulled into the circuit for warm-up, medium power exposures, and high power exposures. The high power capacitor gets pulled into the circuit for warm-up and high power exposures.

AL 13 Capacitor Wiring



AL 14 Capacitor Wiring



CAUTION See section Shrouding The Lamp before continuing.

The capacitors set the operating current of the lamp. If the lamp output has changed rapidly, inspect the capacitors for swelling. The design of the capacitors we use will burn open if it begins to short. A swollen capacitor should be replaced and the unit should be tested to see that the capacitor did not damage the P.C. Board.

To test the unit's ability to switch power levels, make a manual exposure at low power, note the voltage between the lamp lead common and the low yellow (about 130V~, see diagram). Then switch to medium brown (about 140V~, see diagram). Then switch to high power and note the voltage between the lamp lead common and the high blue (about 150V~, see diagram).

Should one or more of these voltages be about 270V~, the respective capacitor is not being pulled into the circuit and the P.C. Board is most

likely at fault. Should the voltage be unchanged from the previous power level, a bad capacitor or bad connection between the capacitor and the P.C. Board is most likely at fault.

Shutter

The shutter is controlled by the P.C. Board with information from a switch below the component chassis to provide position information. During cool-down and exposure, the shutter is open and during warm-up and idle, the shutter is closed. The P.C. Board compares the shutter position with the requested position. The shutter motor will run until the switch position matches. The shutter motor brakes magnetically when it is in the correct position. There is an led on the P.C. Board that lights whenever the shutter motor is being energized (see P.C. BOARD LAYOUT).

Shutter Switch

The switch provides shutter position information to the P.C. Board. This switch is below the component chassis. A failure of the switch can cause the shutter to rotate continuously or erratically. Similar problems may be due to the shutter brake, the idle setting, or the P.C. Board.

The switch contacts close when the shutter is fully open and remains closed until the shutter fully closes. This can be measured on the P.C. Board (see P.C. BOARD LAYOUT). The switch is wired to the normally open contacts and is adjustable. We recommend scribing a line around the switch if replacement is necessary to return to the same position. The switch roller should be centered on the cam and close when the cam pushes the wheel on the switch halfway.

Shutter Motor

The shutter motor is located between the two sets of capacitors. We recommend checking the power and signals from the switch and to the motor coil before removing the motor. The motor operates from 9VDC which comes from the P.C. Board. Should the motor want to travel past its desired location and the shutter switch is operating properly the motor brushes are most likely to be at fault and are replaced as follows.

Changing Shutter Motor Brushes

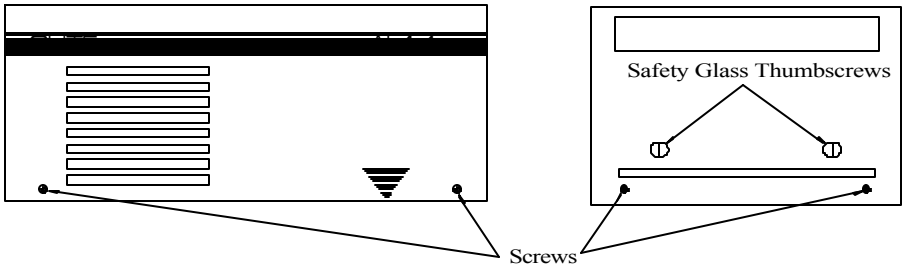
Should the shutter motor ever need replacement you will need a Phillips screwdriver and a 5/32" Allen wrench.

- Remove the safety glass and the cover (see AL 13/14 COVER REMOVAL).
- Remove the two Phillips screws holding the shutter timing cam onto the motor assembly from underneath the component chassis, swing the timing cam out of the way.
- Remove the four Phillips screws holding the motor to the chassis and pull the motor out.
- Remove the orange and brown wires from the motor (orange from terminal #1 and brown from terminal #2).

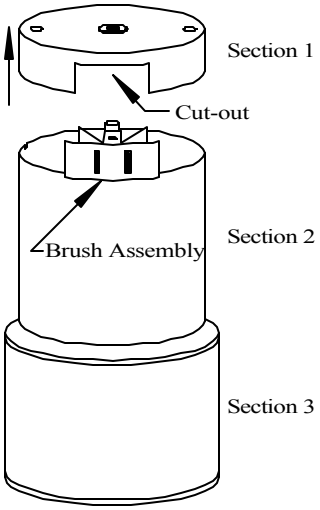
- Remove the cam mount from the motor using the 5/32 Allen wrench.
- Install in reverse order.

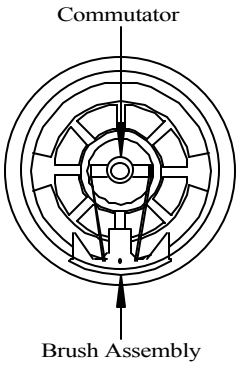
Steps to change shutter motor brushes.

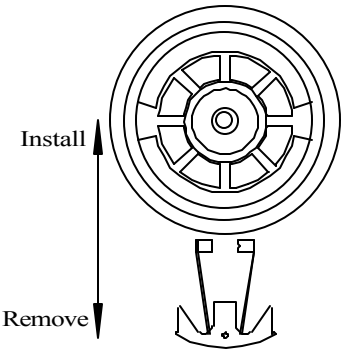
- Place the light on its top and remove the hood and filter assembly.
- Place the light on a table with the shutter flat against the table and remove the two screws from each of the four sides and remove the cover.



- Locate the shutter motor and remove the orange wire from terminal No. 1 and the brown wire from terminal No. 2. Remove the two Phillips screws from the top section of the motor. Use a knife or razor blade to cut any tape or labels holding section 1 to section 2. Usually they are just terminal labels marked 1 and 2.



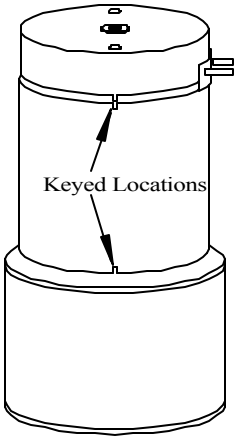


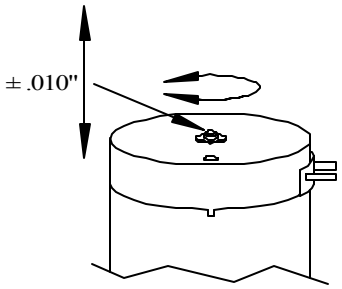


- Apply a downward pressure with your thumbnail on the brush assembly. While keeping the brush assembly on section 2 of the motor, lift off section 1 with a rocking motion.
- Slide brushes off the commutator. Slide new brush assembly onto commutator.

Note: Center hole on brush assembly must face up.

- The brush assembly has a shoulder that rests on the motor housing (section 2). The brush assembly is in position when the brushes center over the farthest outside edges of the commutator. Use your thumbnail to keep the brush assembly in place.
- Install section 1 by tilting the cut-out so that it fits in behind the brush assembly. Drop down the rest of the section 1 till it meets section two. Align the key and slots between sections 1 and 2, and 2 and 3. Apply Loctite Threadlock #242 on the first quarter inch of the through bolt threads. Use sparingly. Secure motor assembly using both throughbolts at a torque rate of 5-7 inch pounds.





- Once the through bolts are installed make sure the armature has about .010" of play up and down. Using a pair of needle nose pliers, take hold of the armature, move up and down and turn shaft both directions to be sure it is and the armature moves freely.
- Reconnect the orange wire to terminal No. 1 and the brown wire to terminal No. 2.

Idle Setting

The idle level occurs when the unit is between exposures and when the unit is at low power exposures. The idle setting determines the power and temperature of the lamp while at idle. It also allows for much lower idle power than was ever attainable before.

This lower power level provides a wider light output range, low power consumption, lower heat generation, and increased lamp life. At low

power levels, the lamps normally become unstable; if over cooled, they begin to dissipate less energy, which causes them to cool more. This can continue until they extinguish. When lamps become hotter at idle, they become more efficient and dissipate more energy, making them hotter still. This becomes stable, and is commonly done in conventional light sources, but will shorten the life of the lamp and waste energy. We have chosen to servo the cooling, by sensing the lamp condition and adjusting the cooling to regulate the idle temperature.

The idle setting is done at the factory and is rarely necessary in the field. Always check all other causes of problems before changing the setting.

If the lamp becomes too cool during operation, the P.C. Board will sense this level and initiate a warm-up cycle. During warm-up, the shutter will close and will not open until the unit is sufficiently warm. A symptom of this is after an exposure is started, the shutter will open then close again for several seconds before finishing the exposure. This should only happen if the unit is left for a period of time. Successive rapid exposures would not fail, since it takes many minutes for the unit to over cool. The most likely cause of this problem is a defective lamp. This over cooling situation

could also be due to a bad idle capacitor, which would not allow sufficient energy to the lamp to keep it warm.

CAUTION See Shrouding The Lamp before continuing.

After checking the capacitors, mark the factory setting of the trimpot that is located on the back side of the P.C. Board, in the upper left hand corner (see P.C. Board Layout). The trimpot sets the lamp idle power level. Turning the trimpot counterclockwise will first slow the lamp blower. As the lamp reaches the new idle setting, the blower will speed up to hold the new level. Setting with a meter is done be measuring the lamp voltage on the P.C. Board lamp lead hot and lamp lead common (see P.C. Board Layout). The idle setting is 130V~. The voltage will increase with a counterclockwise adjustment and decrease with a clockwise adjustment. This voltage change is a secondary effect, after the lamp has responded to the change in cooling. The changes should be done in small increments, waiting 60 seconds between each adjustment before taking the next reading.

The idle setting affects the power that the lamp attains on warm-up cycle, before switching to idle and the idle temperature of the lamp. If the setting is too high (too far counterclockwise), the unit will run at high power with no cooling, until the thermostat switches the unit off. The idle temperature of the lamp affects its life and reliability. If the idle setting is too low (too far clockwise), the lamp will be slow to come to power for exposures, and the unit may initiate a warm-up cycle. For these reasons, please take care when making this adjustment and check all other problems first.

Blower

The lamp blower is controlled by the P.C. board to provide the correct cooling to the lamp. During warm-up the blower is off. At idle and during low and medium power exposures the blower will vary in speed. At high power exposure and during cool-down, the blower runs at full speed.

A symptom of a defective blower would be: after the light is on for a short period of time, the lamp extinguishes and requires 2 to 4 minutes to restart. The heat causes the thermostat to open (see Interlock System).

To test the blower, turn the light on and then off. This will put the light source into a forced cool-down cycle. During the cool-down cycle, place a piece of paper over the intake vent located on the opposite side of the light from where the control cables enter. If the paper does not get pulled to the vent the blower is suspect.

To replace the blower see COVER REMOVAL.

Blown Fuse

The P.C. board drives several circuits: THE BLOWER, SHUTTER MOTOR, and the SHUTTER POSITION SWITCH. To find the cause of a blown fuse unplug the light and remove the cover (see Cover Removal). Disconnect the blower, shutter motor, and the shutter position switch (see P.C. Board Layout).

Plug the unit in and turn on the power for 10 seconds. If the fuse blows, the problem is the P.C. board. If not, unplug the light and reconnect the shutter motor wires. Plug in the unit and turn it on, the shutter should now operate. If the fuse blows, the problem is in the shutter motor or wiring to the motor. Repeat these steps with the shutter position switch and the blower.

Photocell

The photocell is located on the P.C. board. Light is transmitted to the photocell by a glass rod that travels the length of the unit from the reflector. This rod is covered to keep dust from accumulating on it. If it becomes necessary to remove the rod, do so carefully. If the rod gets broken, light will not transmit properly and the photocell will not get enough light in order to operate properly.

There are three adjustments for the photocell, overall photocell, photocell A(high), and photocell B(low)(see P.C. Board Layout). The overall photocell calibration is adjusted at the factory and is rarely necessary in the field. The photocell A and photocell B are coarse adjustments, fine adjustments should be made at the integrator.

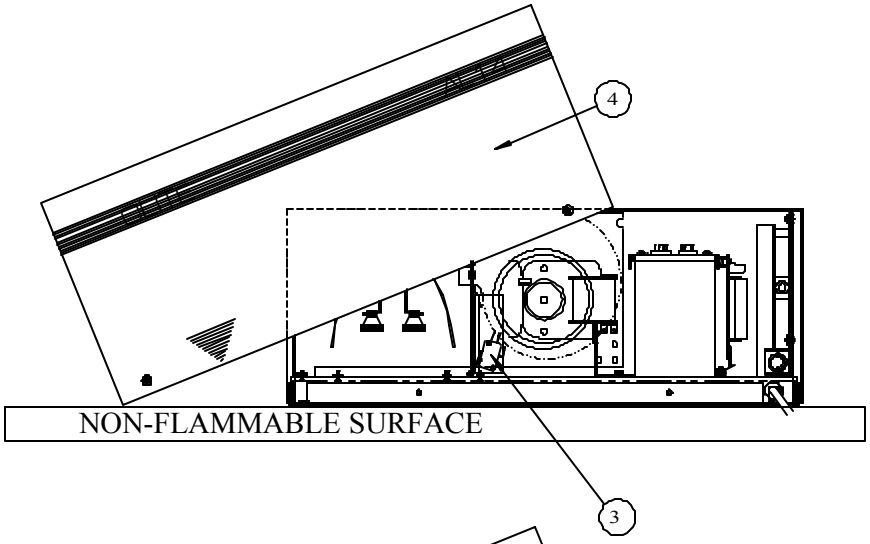
Shrouding The Lamp

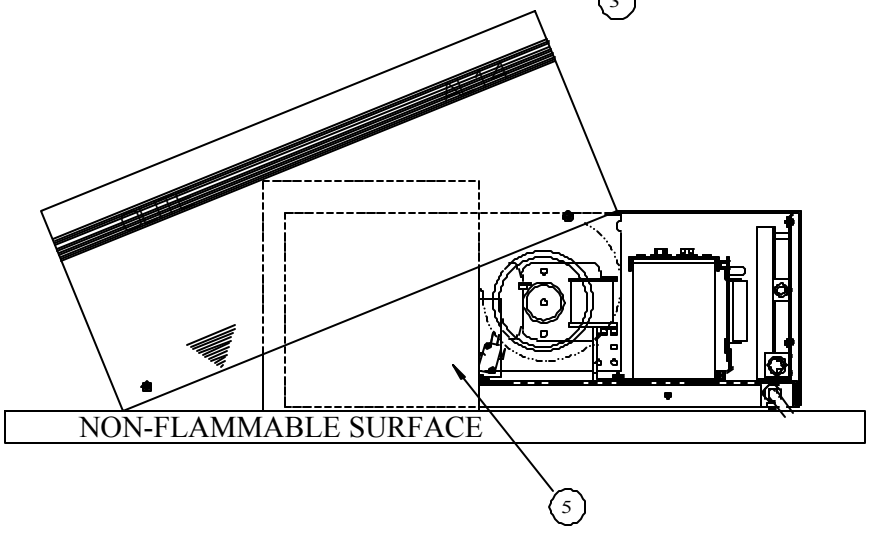
CAUTION You must shroud the lamp whenever you operate the AL13/14 without the cover installed. Shrouding the lamp will keep you from being exposed to the harmful unfiltered UV, and will also make sure the cooling of the lamp is not effected. Shrouding is done as follows:

- Remove the safety glass and the cover (see COVER REMOVAL).
- Place the AL 13/14 on a non-flammable surface.

CAUTION Do not place on wood, carpet, or any surface affected by heat.

- Bypass the glass switches by wedging a small screwdriver between the switches and the internal dividing wall.
- Place the cover over the AL 13/14 about half way from end to end.
- Place a small piece of non-flammable material (a piece of plate material works well) at each end of the lamp.





8 Parts List

Version 1 - 220V/50hZ

PART NUMBER	DESCRIPTION	QUANTITY
90OV29-5T00	Exposure System OV 29	1
11D1648A02	Flangeplate, HF1	1
11D3419A06	Bezel integrtor OV 29	1
13FGD02	Guard blower fan	1
15D3458A00	Overlay OV29	1
16D1003A08	Connector Cable 8 feet	2
54PWR12	Power Cord for 50 Hz Ctl	1
62D2958B00	Assy, Pump W/Cap	1
11D2959A62	Pump, Plate, OV 29	1
39VAP12	Pump, Vacuum	1
44ADT05	Hose adapter, 1/8x5/16	1
51TML01	Terminal Male 18-22 AWG	3
52CTP08	Plug, 3 Pin Molex, .093 P	1
62DU29-AVB-14	AccuVac 29 base kt	1
11D3413A02	Cover, PCB - OV 29	1
11D3521A62	Bracket, switch mount	1
11D3591A62	Bracket, worklight	2
11D4738A02	Spring guard, upper	2
11D4739A02	Spring guard, lower	2
16D1003A08	Connector Cable 8 feet	2
16D1003A15	15 ft Shielded 24AWG Cable	1
16D3120F10	Wire,jumper	1
16D3120G04	Wire,jumper	1
16D3120G10	Wire,jumper	1
16D3127A15	Cable, 12VDC-484/Acc	1
16D3303A00	Cable, interlock - OV29	1
16D3304A00	Cable, start switch-OV 29	1
16D3415A00	Cable, I/O - OV29	1
16D3451A04	Cable Ground Wire 4"	2
16D3451A10	Cable,Grd wire R/R 10"L	1
16D3451A98	Cable,Grd wire R/R 98" L	1
16D3452A10	Cable Ground Wire 10"	1
16D3452B10	Wire,jumper QD Ring 10"	1
16D3452C03	Wire,Jmp QD/Ring 18" L	1
16D3452C10	Wire,Jmp QD/Ring 10"L	1

PART NUMBER	DESCRIPTION	QUANTITY
29PLF01	RFI Power line filter	1
31SOV10	Solenoid Valve	2
39CLF03	Light Fixture U-Cabinet	1
43FIT38	Tee,Barbed 5/16 Hose	3
43FIT64	Reducer, Tube 1/8 X 5/16	1
44ADT05	Hose adapter, 1/8x5/16	3
44CLH01	Clincher, releaseable	2
44HDL01	Handle, Plastic OV24	2
44LEG02	J-Leg,OV #7541-8-02 Glide	2
45KOB05	Knob, Glass. Carriage	2
45KOB06	Knob, Lite Std	4
49C4R	Wheel, Caster-OV24/29	4
49DCT24	Tubing, 5/16 1.D.x1/2 O.D	12
52CTP08	Plug, 3 Pin Molex, .093 P	1
52CTP33	Connect/Fuse holder 1EC	1
52RCP08	Receptacle, 3 Pin	3
52TS21	Terminal block,5-pos,30a	1
52TS21-C	Terminal block cover,5-po	1
54JMP04	Jumper, Slip-on-TB300	2
55SW17	Switch, Timing - 2.5 Leve	1
56FUS22	Fuse 10 amp/250 V(5x20mm)	2
62D2483A00	Blower, 50 Hz 220V	1
11D0153A63	Blower Bracket 50 Hz	1
11D191	Blower Motor Bracket 50 H	1
13BLO01	Impeller Blower	1
13BLO02	Housing, Lexan Black	1
31MOT15	Motor,Universal 110/220	1
51TML02	Terminal Female 18-22 AWG	4
52CTP16	Plug, 4 Pin Molex Intntl.	1
62D3298A00	Assy, False Floor, OV 29	1
11D2826A00	External Reflector	2
11D2827A00	Ext Refl.(Lh&Rh)OVd29/34	2
11D3278A20	False Floor	1
18D2867A00	Diffuser, Worklight OV29	1
44HDL01	Handle, Plastic OV24	2
62D3300A00	Frame Lid Assy AccuVac	1
11D3281A02	Bracket, Hinge	1
11D3287A02	Frame, Glass	1

PART NUMBER	DESCRIPTION	QUANTITY
11D3288A02	Trim, Glass Rear	1
11D3291A02	Trim, Glass Front	1
12D1675A99	Pin, Hinge OV29	2
12D2961A00	Spring, Helical Torsion	1
12D2962A62	Spacer, Spring (8 Coil)	1
12D3527A00	Spring torsion, Hi-Torque	1
12D3572A07	Spacer, Tubing Hinge	2
12D4564A62	Spacer narrow(Spring)	1
18D3292A00	Glass Pane - OV 29	1
43BLB07	Bearing, Sleeve	4
43BLB08	Bearing, Snapin	8
43TET01	S-Tee, Tubing,.25-Barbed	1
62D2059A00	Assembly Spring/Switch	1
63D3296A00	Shell, Assy	1
63D3414A00	Blanket assembly OV 29	1
81TAP07	Tape,OV24 1/8" x 1" x 50	9
64PCS001V03	PCB, Set DU29-110V/220V	1
16D1003A15	15 ft Shielded 24AWG Cable	1
16D2287A00	Cable, 20P Integrator Display	1
16D2945A00	Cable, 12VDC-441E/484	1
16D3416A00	Cable, 15 pin,shielded	1
61D3760A00	Firmware, OV 29	1
64CT484V02	Assy, Cntrl Bd,OV29-240V	1
64MI441E	Main PCB Board	1
64MI477V00	Assy,Suppl Key Bd	1
64MI488V00	PCB Assy, Keybd 975	1
62OL14-W-L2	OL14 Prtg Lt Wide-Refl L2	1
35LMP24	Lamp L902	1
62D2089A07	Sub-Ass'y OL14	1
11D3461A62	Clamp, safety glass	2
11D747	AL13/14 Motor Plate	1
11D749	AL13/14 Coupling	1
16D2110B00	Wire Harness, AL 14	1
31MOT11	Motor,AL13/14	1
32BAL09	Ballast 50 Hz AL 14	1
34CAP15-S	Cap, 15μf+-6% 400V~	1
34CAP18-S	Cap, AC, 20μf +-6%, 400V~	3
44RST08	NSI Strain Relief	1

PART NUMBER	DESCRIPTION	QUANTITY
52CTP22	Plug, 2 Pin Molex Int'l	1
54CAB12	Cable,International -16/3	6
55SW02	Switch, Timing - Roller	2
55SW12	Switch, AL 13/14	2
56FUS04	Fuse, 5A/250V Slow Blow 3AG	1
56THM03	Thermostat, 90^C (+/-) 10%	2
62D2483A00	Blower, 50 Hz 220V~	1
62D969	AL 13/14 Link Assembly	1
63D0142B02	AL 13/14 Lamp Support Ass	2
64MV427V01	Controller UV lt 1k	1
64MV461V00	Assy,Resistor PCB AL13/14	1
64PCS001V00	PCB Set, OV 29-220V	1
16D1003A10	Connector Cable 10 feet	1
16D2287A00	Cable, 20P Integrator Dis	1
16D2945A00	Cable, 12VDC-441E/484	1
16D3416A00	Cable, 15 pin,shielded	1
53SKL01	Socket,16 pin Double Wipe	1
61D3425A00	Firmware- OV29	1
64CT484V02	Assy, Cntrl Bd,OV29-240V	1
64MI441E	Main PCB Board	1
64MI477V00	Assy,Suppl Key Bd	1
64MI488V00	PCB Assy, Keybd 975HorDis	1
90PA86	PA86 Dual Photocell f/Fra	1

Version 1 - 120V/60Hz

PART NUMBER	DESCRIPTION	QUANTITY
90OV29-6T00	Exposure System OV 29	1
11D3419A06	Bezel integrtor OV 29	1
13FGD02	Guard blower fan	1
15D3458A00	Overlay OV29	1
16D1003A08	Connector Cable 8 feet	2
16D3127A15	Cable, 12VDC-484/Acc	1
52RCP23	Power Outlet 20A/250V Int	1
54PWR06	Pwr Crd 16/3 SJT 6' 5-15P	1
62D2958A00	Assy, Pump W/Cap	1
11D2959A62	Pump, Plate, OV 29	1
39VAP11	Pump, Vacuum	1
44ADT03	Hose adapter, 1/8x5/16	1
51TML01	Terminal Male 18-22 AWG	3
52CTP08	Plug, 3 Pin Molex, .093 P	1
62DU29-BASE-01	AccuVac 29 base kt	1
11D3413A02	Cover, PCB - OV 29	1
11D3521A62	Bracket, switch mount	1
11D3591A62	Bracket, worklight	2
11D4738A02	Spring guard, upper	2
11D4739A02	Spring guard, lower	2
16D1003A08	Connector Cable 8 feet	2
16D1003A15	15 ft Shielded 24AWG Cable	1
16D3120F10	Wire,jumper	1
16D3120G04	Wire,jumper	1
16D3120G10	Wire,jumper	1
16D3127A15	Cable, 12VDC-484/Acc	1
16D3303A00	Cable, interlock - OV29	1
16D3304A00	Cable, start switch-OV 29	1
16D3415A00	Cable, I/O - OV29	1
16D3451A04	Cable Ground Wire 4"	2
16D3451A10	Cable,Grd wire R/R 10"L	1
16D3451A98	Cable,Grd wire R/R 98" L	1
16D3452A10	Cable Ground Wire 10"	1
16D3452B10	Wire,jumper QD Ring 10"	1
16D3452C03	Wire,Jmp QD/Ring 18" L	1
16D3452C10	Wire,Jmp QD/Ring 10"L	1
29PLF01	RFI Power line filter	1

PART NUMBER	DESCRIPTION	QUANTITY
31SOV10	Solenoid Valve	2
39CLF03	Light Fixture U-Cabinet	1
43FIT38	Tee,Barbed 5/16 Hose	3
43FIT64	Reducer, Tube 1/8 X 5/16	1
44ADT05	Hose adapter, 1/8x5/16	3
44CLH01	Clincher, releaseable	2
44HDL01	Handle, Plastic OV24	2
44LEG02	J-Leg,OV #7541-8-02 Glide	2
45KOB05	Knob, Glass. Carriage	2
45KOB06	Knob, Lite Std	4
49C4R	Wheel, Caster-OV24/29	4
49DCT24	Tubing, 5/16 1.D.x1/2 O.D	12
52CTP08	Plug, 3 Pin Molex, .093 P	1
52CTP33	Connect/Fuse holder 1EC	1
52RCP08	Receptacle, 3 Pin	3
52TS21	Terminal block,5-pos,30a	1
52TS21-C	Terminal block cover,5-po	1
54JMP04	Jumper, Slip-on-TB300	2
55SW17	Switch, Timing - 2.5 Leve	1
56FUS14	Fuse 15 amp/250 V(5x20mm)	2
62D2483A00	Blower, 50 Hz 220V	1
11D0153A63	Blower Bracket 50 Hz	1
11D191	Blower Motor Bracket 50 H	1
13BLO01	Impeller Blower	1
13BLO02	Housing, Lexan Black	1
31MOT15	Motor,Universal 110/220	1
51TML02	Terminal Female 18-22 AWG	4
52CTP16	Plug, 4 Pin Molex Intntl.	1
62D3298A00	Assy, False Floor, OV 29	1
11D2826A00	External Reflector	2
11D2827A00	Ext Refl.(Lh&Rh)OVd29/34	2
11D3278A20	False Floor	1
18D2867A00	Diffuser, Worklight OV29	1
44HDL01	Handle, Plastic OV24	2
62D3300A00	Frame Lid Assy AccuVac	1
11D3281A02	Bracket, Hinge	1
11D3287A02	Frame, Glass	1
11D3288A02	Trim, Glass Rear	1

PART NUMBER	DESCRIPTION	QUANTITY
11D3291A02	Trim, Glass Front	1
12D1675A99	Pin, Hinge OV29	2
12D2961A00	Spring, Helical Torsion	1
12D2962A62	Spacer, Spring (8 Coil)	1
12D3527A00	Spring torsion, Hi-Torque	1
12D3572A07	Spacer, Tubing Hinge	2
12D4564A62	Spacer narrow(Spring)	1
18D3292A00	Glass Pane - OV 29	1
43BLB07	Bearing, Sleeve	4
43BLB08	Bearing, Snapin	8
43TET01	S-Tee, Tubing,.25-Barbed	1
62D2059A00	Assembly Spring/Switch	1
63D3296A00	Shell, Assy	1
63D3414A00	Blanket assembly OV 29	1
81TAP07	Tape,OV24 1/8" x 1" x 50	9
64PCS001V02	PCB, Set DU29-110V/120V	1
16D1003A15	15 ft Shielded 24AWG Cable	1
16D2287A00	Cable, 20P Integrator Display	1
16D2945A00	Cable, 12VDC-441E/484	1
16D3416A00	Cable, 15 pin,shielded	1
61D3760A00	Firmware, OV 29	1
64CT484V03	Assy, Cntrl Bd,OV29-240V	1
64MI441E	Main PCB Board	1
64MI477V00	Assy,Suppl Key Bd	1
64MI488V00	PCB Assy, Keybd 975	1
62OL13-W-L2	OL13 Prtg Lt Wide-Refl L2	1
35LMP24	Lamp L902	1
62D2089A08	Sub-Ass'y OL13	1
11D3461A62	Clamp, safety glass	2
11D747	AL13/14 Motor Plate	1
11D749	AL13/14 Coupling	1
16D2110A00	Wire Harness, AL 13	1
31MOT11	Motor,AL13/14	1
32BAL08	Ballast 50 Hz AL 13	1
34CAP15-S	Cap, 15µ*f*+-6% 400V~	2
34CAP18-S	Cap, AC, 20µ*f* +-6%, 400V~	2
44RST08	NSI Strain Relief	1
52CTP22	Plug, 2 Pin Molex Int'l	1

PART NUMBER	DESCRIPTION	QUANTITY
54CAB12	Cable,International -16/3	6
55SW02	Switch, Timing - Roller	2
55SW12	Switch, AL 13/14	2
56FUS04	Fuse, 5A/250V Slow Blow 3AG	1
56THM03	Thermostat, 90^C (+/-) 10%	2
62D2483A00	Blower, 50 Hz 220V~	1
62D969	AL 13/14 Link Assembly	1
63D0142B02	AL 13/14 Lamp Support Ass	2
64MV427V00	Controller UV lt 1k	1
64MV461V00	Assy,Resistor PCB AL13/14	1
64PCS001V00	PCB Set, OV 29-220V	1
16D1003A10	Connector Cable 10 feet	1
16D2287A00	Cable, 20P Integrator Dis	1
16D2945A00	Cable, 12VDC-441E/484	1
16D3416A00	Cable, 15 pin,shielded	1
53SKL01	Socket,16 pin Double Wipe	1
61D3425A00	Firmware- OV29	1
64CT484V02	Assy, Cntrl Bd,OV29-240V	1
64MI441E	Main PCB Board	1
64MI477V00	Assy,Suppl Key Bd	1
64MI488V00	PCB Assy, Keybd 975HorDis	1
90PA86	PA86 Dual Photocell f/Fra	1
62OV29-AVB-13	OV 29 AccuVac Ass'y kit	1

Version 2 - 220V/50hZ

PART NUMBER	DESCRIPTION	QUANTITY
90OV29-5T00	Exposure System OV 29	1
11D3419A06	Bezel integrtor OV 29	1
13FGD02	Guard blower fan	1
15D3458A00	Overlay OV29	1
16D1003A08	Connector Cable 8 feet	2
54PWR12	Power Cord for 50 Hz Ctl	1
62D4949A00	Assy, Pump W/Cap	1
11D2959A62	Pump, Plate, OV 29	1
39VAP24	Pump, Vacuum	1
44ADT03	Hose adapter, 1/8x5/16	1
62DU29-BASE-01	AccuVac 29 base kt	1
11D3413A02	Cover, PCB - OV 29	1
11D3521A62	Bracket, switch mount	1
11D3591A62	Bracket, worklight	2
11D4738A02	Spring guard, upper	2
11D4739A02	Spring guard, lower	2
16D1003A08	Connector Cable 8 feet	2
16D1003A15	15 ft Shielded 24AWG Cable	1
16D3120F10	Wire,jumper	1
16D3120G04	Wire,jumper	1
16D3120G10	Wire,jumper	1
16D3127A15	Cable, 12VDC-484/Acc	1
16D3303A00	Cable, interlock - OV29	1
16D4953A16	Cable, start switch-OV 29	1
16D4952A00	Cable, I/O - OV29	1
16D3451A04	Cable Ground Wire 4"	2
16D3451A10	Cable,Grd wire R/R 10"L	1
16D3451A98	Cable,Grd wire R/R 98" L	1
16D3452A10	Cable Ground Wire 10"	1
16D3452B10	Wire,jumper QD Ring 10"	1
16D3452C03	Wire,Jmp QD/Ring 18" L	1
16D3452C10	Wire,Jmp QD/Ring 10"L	1
43FIT64	Reducer, Tube 1/8 X 5/16	1
44ADT05	Hose adapter, 1/8x5/16	3
44CLH01	Clincher, releaseable	2
44HDL01	Handle, Plastic OV24	2
44LEG02	J-Leg,OV #7541-8-02 Glide	2

PART NUMBER	DESCRIPTION	QUANTITY
45KOB05	Knob, Glass. Carriage	2
45KOB06	Knob, Lite Std	4
49C4R	Wheel, Caster-OV24/29	4
49DCT24	Tubing, 5/16 1.D.x1/2 O.D	12
52CTP08	Plug, 3 Pin Molex, .093 P	1
52CTP33	Connect/Fuse holder 1EC	1
52RCP08	Receptacle, 3 Pin	3
52TS38	Terminal block,5-pos,30a	1
52TS37	Terminal block,10-pos,30a	1
54JMP04	Jumper, Slip-on-TB300	2
55SW17	Switch, Timing - 2.5 Leve	1
56FUS22	Fuse 10 amp/250 V(5x20mm)	2
62D2483A00	Blower, 50 Hz 220V	1
11D0153A63	Blower Bracket 50 Hz	1
11D191	Blower Motor Bracket 50 H	1
13BLO01	Impeller Blower	1
13BLO02	Housing, Lexan Black	1
31MOT15	Motor,Universal 110/220	1
51TML02	Terminal Female 18-22 AWG	4
52CTP16	Plug, 4 Pin Molex Intntl.	1
62D3298A00	Assy, False Floor, OV 29	1
11D2826A00	External Reflector	2
11D2827A00	Ext Refl.(Lh&Rh)OVd29/34	2
11D3278A20	False Floor	1
18D2867A00	Diffuser, Worklight OV29	1
44HDL01	Handle, Plastic OV24	2
62D4950A00	Frame Lid Assy AccuVac	1
11D3281A02	Bracket, Hinge	1
11D3287A02	Frame, Glass	1
11D3288A02	Trim, Glass Rear	1
11D4963A02	Trim, Glass Front	1
12D1675A99	Pin, Hinge OV29	2
12D2961A00	Spring, Helical Torsion	1
12D2962A62	Spacer, Spring (8 Coil)	1
12D3527A00	Spring torsion, Hi-Torque	1
12D3572A07	Spacer, Tubing Hinge	2
12D4564A62	Spacer narrow(Spring)	1
18D3292A00	Glass Pane - OV 29	1

PART NUMBER	DESCRIPTION	QUANTITY
43BLB07	Bearing, Sleeve	4
43BLB08	Bearing, Snapin	8
43TET01	S-Tee, Tubing,.25-Barbed	1
62D2059A00	Assembly Spring/Switch	1
63D4951A00	Shell, Assy	1
63D3414A00	Blanket assembly OV 29	1
81TAP07	Tape,OV24 1/8" x 1" x 50	9
64PCS001V00	PCB, Set DU29-110V/220V	1
16D1003A10	15 ft Shielded 24AWG Cable	1
16D2287A00	Cable, 20P Integrator Display	1
16D2945A00	Cable, 12VDC-441E/484	1
16D3416A00	Cable, 15 pin,shielded	1
61D3425A00	Firmware, OV 29	1
64CT484V02	Assy, Cntrl Bd,OV29-240V	1
64MI441E	Main PCB Board	1
64MI477V00	Assy,Suppl Key Bd	1
64MI488V00	PCB Assy, Keybd 975	1
62OL14-W-L2	OL14 Prtg Lt Wide-Refl L2	1
35LMP24	Lamp L902	1
62D2089A07	Sub-Ass'y OL14	1
11D3461A62	Clamp, safety glass	2
11D747	AL13/14 Motor Plate	1
11D749	AL13/14 Coupling	1
16D2110B00	Wire Harness, AL 14	1
31MOT11	Motor,AL13/14	1
32BAL09	Ballast 50 Hz AL 14	1
34CAP15-S	Cap, 15µ*f*+-6% 400V~	1
34CAP18-S	Cap, AC, 20µ*f* +-6%, 400V~	3
44RST08	NSI Strain Relief	1
52CTP22	Plug, 2 Pin Molex Int'l	1
54CAB12	Cable,International -16/3	6
55SW02	Switch, Timing - Roller	2
55SW12	Switch, AL 13/14	2
56FUS04	Fuse, 5A/250V Slow Blow 3AG	1
56THM03	Thermostat, 90^C (+/-) 10%	2
62D2483A00	Blower, 50 Hz 220V~	1
62D969	AL 13/14 Link Assembly	1
63D0142B02	AL 13/14 Lamp Support Ass	2

PART NUMBER	DESCRIPTION	QUANTITY
64MV427V01	Controller UV lt 1k	1
64MV461V00	Assy,Resistor PCB AL13/14	1
64PCS001V00	PCB Set, OV 29-220V	1
16D1003A10	Connector Cable 10 feet	1
16D2287A00	Cable, 20P Integrator Dis	1
16D2945A00	Cable, 12VDC-441E/484	1
16D3416A00	Cable, 15 pin,shielded	1
53SKL01	Socket,16 pin Double Wipe	1
61D3425A00	Firmware- OV29	1
64CT484V02	Assy, Cntrl Bd,OV29-240V	1
64MI441E	Main PCB Board	1
64MI477V00	Assy,Suppl Key Bd	1
64MI488V00	PCB Assy, Keybd 975HorDis	1
90PA86	PA86 Dual Photocell f/Fra	1

Version 2 - 120V/60Hz

PART NUMBER	DESCRIPTION	QUANTITY
90OV29-6T00	Exposure System OV 29	1
11D3419A06	Bezel integrtor OV 29	1
13FGD02	Guard blower fan	1
15D3458A00	Overlay OV29	1
16D1003A08	Connector Cable 8 feet	2
16D3127A15	Cable, 12VDC-484/Acc	1
52RCP23	Power Outlet 20A/250V Int	1
54PWR06	Pwr Crd 16/3 SJT 6' 5-15P	1
62D4949C00	Assy, Pump W/Cap	1
11D2959A62	Pump, Plate, OV 29	1
39VAP11	Pump, Vacuum	1
44ADT03	Hose adapter, 1/8x5/16	1
51TML01	Terminal Male 18-22 AWG	3
52CTP08	Plug, 3 Pin Molex, .093 P	1
62DU29-BASE-02	AccuVac 29 base kt	1
11D3413A02	Cover, PCB - OV 29	1
11D3521A62	Bracket, switch mount	1
11D3591A62	Bracket, worklight	2
11D4738A02	Spring guard, upper	2
11D4739A02	Spring guard, lower	2
16D1003A08	Connector Cable 8 feet	2
16D1003A15	15 ft Shielded 24AWG Cable	1
16D3120F10	Wire,jumper	1
16D3120G04	Wire,jumper	1
16D3120G10	Wire,jumper	1
16D3127A15	Cable, 12VDC-484/Acc	1
16D3303A00	Cable, interlock - OV29	1
16D3304A00	Cable, start switch-OV 29	1
16D5236A00	Cable, I/O - OV29	1
16D3451A04	Cable Ground Wire 4"	2
16D3451A10	Cable,Grd wire R/R 10"L	1
16D3451A98	Cable,Grd wire R/R 98" L	1
16D3452A10	Cable Ground Wire 10"	1
16D3452B10	Wire,jumper QD Ring 10"	1
16D3452C03	Wire,Jmp QD/Ring 18" L	1
16D3452C10	Wire,Jmp QD/Ring 10"L	1
29PLF01	RFI Power line filter	1

PART NUMBER	DESCRIPTION	QUANTITY
31SOV10	Solenoid Valve	2
39CLF03	Light Fixture U-Cabinet	1
43FIT38	Tee,Barbed 5/16 Hose	3
43FIT64	Reducer, Tube 1/8 X 5/16	1
44ADT05	Hose adapter, 1/8x5/16	3
44CLH01	Clincher, releaseable	2
44HDL01	Handle, Plastic OV24	2
44LEG02	J-Leg,OV #7541-8-02 Glide	2
45KOB05	Knob, Glass. Carriage	2
45KOB06	Knob, Lite Std	4
49C4R	Wheel, Caster-OV24/29	4
49DCT24	Tubing, 5/16 1.D.x1/2 O.D	12
52CTP08	Plug, 3 Pin Molex, .093 P	1
52FUH08	Fuse holder 1EC	1
52RCP08	Receptacle, 3 Pin	3
52TS21	Terminal block,5-pos,30a	1
52TS21-C	Terminal block cover,5-po	1
54JMP04	Jumper, Slip-on-TB300	2
55SW17	Switch, Timing - 2.5 Leve	1
56FUS14	Fuse 15 amp/250 V(5x20mm)	2
62D2483A00	Blower, 50 Hz 220V	1
11D0153A63	Blower Bracket 50 Hz	1
11D191	Blower Motor Bracket 50 H	1
13BLO01	Impeller Blower	1
13BLO02	Housing, Lexan Black	1
31MOT15	Motor,Universal 110/220	1
51TML02	Terminal Female 18-22 AWG	4
52CTP16	Plug, 4 Pin Molex Intntl.	1
62D3298A00	Assy, False Floor, OV 29	1
11D2826A00	External Reflector	2
11D2827A00	Ext Refl.(Lh&Rh)OVd29/34	2
11D3278A20	False Floor	1
18D2867A00	Diffuser, Worklight OV29	1
44HDL01	Handle, Plastic OV24	2
62D3300A00	Frame Lid Assy AccuVac	1
11D3281A02	Bracket, Hinge	1
11D3287A02	Frame, Glass	1
11D3288A02	Trim, Glass Rear	1

PART NUMBER	DESCRIPTION	QUANTITY
11D3291A02	Trim, Glass Front	1
12D1675A99	Pin, Hinge OV29	2
12D2961A00	Spring, Helical Torsion	1
12D2962A62	Spacer, Spring (8 Coil)	1
12D3527A00	Spring torsion, Hi-Torque	1
12D3572A07	Spacer, Tubing Hinge	2
12D4564A62	Spacer narrow(Spring)	1
18D3292A00	Glass Pane - OV 29	1
43BLB07	Bearing, Sleeve	4
43BLB08	Bearing, Snapin	8
43TET01	S-Tee, Tubing,.25-Barbed	1
62D2059A00	Assembly Spring/Switch	1
63D3296A00	Shell, Assy	1
63D3414A00	Blanket assembly OV 29	1
81TAP07	Tape,OV24 1/8" x 1" x 50	9
64PCS001V02	PCB, Set DU29-110V/120V	1
16D1003A15	15 ft Shielded 24AWG Cable	1
16D2287A00	Cable, 20P Integrator Display	1
16D2945A00	Cable, 12VDC-441E/484	1
16D3416A00	Cable, 15 pin,shielded	1
61D3760A00	Firmware, OV 29	1
64CT484V03	Assy, Cntrl Bd,OV29-240V	1
64MI441E	Main PCB Board	1
64MI477V00	Assy,Suppl Key Bd	1
64MI488V00	PCB Assy, Keybd 975	1
62OL13-W-L2	OL13 Prtg Lt Wide-Refl L2	1
35LMP24	Lamp L902	1
62D2089A08	Sub-Ass'y OL13	1
11D3461A62	Clamp, safety glass	2
11D747	AL13/14 Motor Plate	1
11D749	AL13/14 Coupling	1
16D2110A00	Wire Harness, AL 13	1
31MOT11	Motor,AL13/14	1
32BAL08	Ballast 50 Hz AL 13	1
34CAP15-S	Cap, 15µ*f*+-6% 400V~	2
34CAP18-S	Cap, AC, 20µ*f* +-6%, 400V~	2
44RST08	NSI Strain Relief	1
52CTP22	Plug, 2 Pin Molex Int'l	1

PART NUMBER	DESCRIPTION	QUANTITY
54CAB12	Cable,International -16/3	6
55SW02	Switch, Timing - Roller	2
55SW12	Switch, AL 13/14	2
56FUS04	Fuse, 5A/250V Slow Blow 3AG	1
56THM03	Thermostat, 90^C (+/-) 10%	2
62D2483A00	Blower, 50 Hz 220V~	1
62D969	AL 13/14 Link Assembly	1
63D0142B02	AL 13/14 Lamp Support Ass	2
64MV427V00	Controller UV lt 1k	1
64MV461V00	Assy,Resistor PCB AL13/14	1
64PCS001V00	PCB Set, OV 29-220V	1
16D1003A10	Connector Cable 10 feet	1
16D2287A00	Cable, 20P Integrator Dis	1
16D2945A00	Cable, 12VDC-441E/484	1
16D3416A00	Cable, 15 pin,shielded	1
53SKL01	Socket,16 pin Double Wipe	1
61D3425A00	Firmware- OV29	1
64CT484V02	Assy, Cntrl Bd,OV29-240V	1
64MI441E	Main PCB Board	1
64MI477V00	Assy,Suppl Key Bd	1
64MI488V00	PCB Assy, Keybd 975HorDis	1
90PA86	PA86 Dual Photocell f/Fra	1
62OV29-AVB-13	OV 29 AccuVac Ass'y kit	1

Diffuser Assembly

PART NUMBER	DESCRIPTION	QUANTITY
90DM29	Diffuser, OV 29	1
16D1003A15	15 ft Shielded 24AWG Cable	1
16D3127A15	Cable, 12VDC-484/Acc	1
62D3601A00	Ass'y Diffuser - OV 29	1
11D1395	Plate, Motor Adjustable	1
11D2400A17	Bearing Retainer Diffuser	2
11D3332A17	SLB Bracket motor diff	1
11D3594A17	Frame, Rail-Diff OV 29	1
11D3594B17	Frame Rail-Diff OV29	1
11D3595A17	Frame, Support-Diff OV29	2
11D3596A17	Frame, Holder-Diff OV29	1
11D3598A17	Carrier, Sheet-Diff OV29	1
11D3599A17	Clamp,Sheet-Diff OV 29	1
12D1361	Ladder Chain, # 18-49	ft.
12D1719	SLM Sprocket w/st screw	1
12D2590A77	Spindle, cable-diff	2
12D3515A00	Ball, bearing	2
12D3603A00	Shaft - Diff OV 29	1
12D3604A00	Roller - Diff OV 29	1
12D700	Sprocket 10 Tooth .250 Bo	1
16D3337A00	Cable, Motor - Diffuser	1
16D3597A00	C-Cable, Switches	1
18D3602A00	Sheet-Diff/OV29	1
31MOT11	Motor,AL13/14	1
43CAB01	Miniature Cable, Stainles	ft.
43SLV01	Loop Sleeve, Cable, .027	8
43SPR23	Extension Spring, 0.026	2
49PUL01	Nylon Idler Pully	2
55SW17	Switch, Timing	2
64DC447-45	CHG Assy, Diff Ctl PCB	1
68D3600A00	Instr. Diff Assy OV 29	1
81TAP03	Tape double side 4408	in.
82ADH01	Adhesive, 3 Bond	in.

Filter Assemblies

PART NUMBER	DESCRIPTION	QUANTITY
62FM-01	Motorized Sliding Filter Assembly	1
11D5055A02	Cover, filter housing	1
11D5056A02	Base, filter mounting	1
11D5057A02	Bracket, PCB, mounting	1
11D5058A62	Rail, filter plate	4
11D5059A62	Frame, forward filter	2
11D5060A62	Frame, filter top	2
11D5064A62	Frame, filter bottom	2
11D5198A71	Reflector, filter frame	1
16D3337A00	Cable, Motor - Diffuser	1
16D5066A00	Cable, switch filter	1
31MOT11	Motor,AL13/14	1
43CAB01	Miniature Cable, Stainles	3
43SLV01	Loop Sleeve, Cable, .027-	2
43SPR03	Friction Spring	1
49DWH01	Friction Drive Wheel	1
49PUL01	Nylon Idler Pully	1
55SW02	Switch, Timing - Roller	2
63D2554A00	Ass'y Kokomo Rot Filter	1
64DC447-T	CHG Diffuser Control PCB	1
90FH9MQ	Rotary Filter AL 13/14	1
62D1219	Assy, Base- Rotary Filter	1
11D1200	Base, Rotary Filter	1
11D1206	Mount,Idler-Spring-RF	1
12D2598A99	Bushing,OD.25ID17L38	3
16D1336	Cable, Diff/M.Q	1
43SPR10	Spring, Rotary Filter	1
44WSH04	#6 Shldr washer,.56	8
49PUL01	Nylon Idler Pully	3
62D1216	Assy, Drive - Rotary Filt	1
31MOT09	Motor, Gear 24 V for Roll	1
49DWH01	Friction Drive Wheel	1
49DWH02	Tire, Rot. Filter Drive	1
64MQ446-T	Tested PCB Motorized Quad	1
63D1218A00	Assy, Disk- Rotary Filter	1

OLEC

Limited Warranty

OLEC equipment is warranted against defects in material for ONE (1) Year from date of purchase. Faulty parts will be repaired, replaced, or purchase price refunded at OLEC's option, for the original Buyer, provided the parts have been replaced by authorized personnel and are returned prepaid to the OLEC factory in Irvine, CA. Shipment must be accompanied by proof of purchase and the Dealer/Distributor name.

This Warranty applies only to equipment which was installed and used according to instructions and in the way it was intended to be used by the manufacturer. Unauthorized repairs, use of non-OLEC parts and lamps, modification, or Serial Numbers that have been removed or defaced, void this Warranty. Glass parts are not included in this Warranty. Lamps are covered according to the Warranty below.

The OLEC Corporation and/or the Seller shall not be liable for any loss, damage or injury arising out of the improper use of, the failure of, or the inability to use the equipment. It is the Buyer's responsibility to ascertain the suitability of the equipment for the application. The Buyer assumes all risk and responsibility for the proper installation, for reading the Instruction Manual and retaining it with the equipment for the safe use of the OLEC product. All operators must be made familiar with the proper use and safe operation upon installation and periodically thereafter.

No one is authorized to assume any obligation, either on behalf of the OLEC Corporation or the Seller, which is not in accordance with the above.

Lamp Warranty

Should any original OLITE Lamp fail prematurely when used in OLEC lights, it should be returned promptly to OLEC, prepaid. It should be accompanied by proof of purchase, explanation of the type of failure incurred, and the approximate useful life of the lamp prior to failure. If it is determined by OLEC that the failure or shortened life has been caused by faulty material or workmanship, full or partial replacement will be extended to the Buyer.

IMPORTANT: The use of any lamp, other than those purchased or approved by OLEC will void this Warranty.

All Warranty Service should be handled through the Distributor through whom the equipment was purchased.

Corporation

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